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OCTOBER 21, 1961

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

C. C. Pearce (right), retiring USITA president, receives bronze plaque from Director Harris G. Allen in recognition of his service to the national Independent group.

Circulation This Issue
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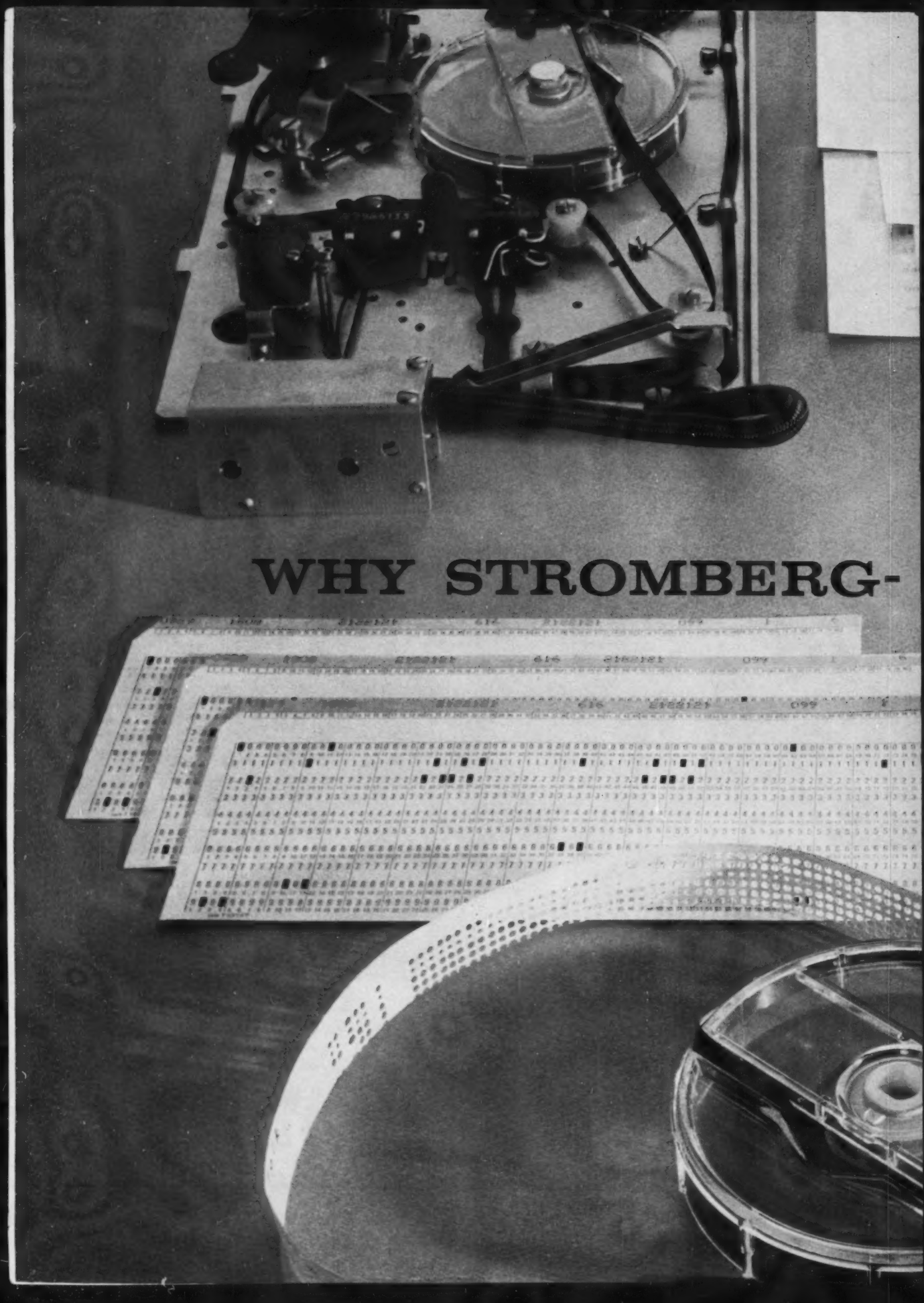
USITA CONVENTION REPORT ISSUE

MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING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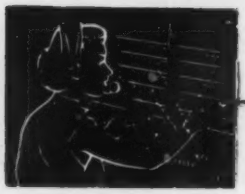

FLASHES AND PLUGS

NOT A BEEP-BEEP, BUT A BURP-BURP. From Pilsworth, England, comes a Chicago Tribune Press Service report that an ordinarily well-mannered pub telephone, which goes "brr, brr-rr," had been mysteriously sounding off with a "burp-burp, burp-burp," and then going completely dead.

Night after night, when this phenomenon occurred, telephone engineers were notified, and morning after morning, when they tested the telephone, nothing wrong could be found.

Finally, an engineer stayed all evening. About 8 p.m., the "brr-brr" began to grow fuzzy. Half an hour later, it was going "burp-burp," and just a half hour after that, the telephone was dead.

The engineer dismantled the instrument, found it was damp, and, beginning to suspect the trouble, sniffed. "Gin," he cried, "It's gin!"

Above the counter where the telephone lay was an upended bottle whose contents were being measured out by a dispenser, and the dispenser was leaking—a drop at a time—which splashed on the telephone. Gradually, the telephone was getting thoroughly soaked, or just plain drunk!

The engineer also discovered that by morning, the alcohol content of the instrument had evaporated, and the telephone was then dry and clear-voiced.

Remedy: He moved the gin bottle three inches to the left. Now, once more, Three Arrows' pub's telephone goes soberly about its business of "brr-brr, brr-brr."

•

JURY JUMPING BY A JUNIOR. The AP reported recently that in Burbank, Cal., a 14-year-old junior high school girl, Susan Carson, had received a questionnaire from the Federal District Court, summoning her for jury duty.

"I'd sure like to see that clerk's face when he sees I was born on Apr. 6, 1957," said Susan. "Actually, I'd like to serve.

Her father, Wilbur M. Carson, guessed that his daughter's name must have been taken from the telephone directory, where both she and her sister have telephone listings.

Susan and Penny, who is 16, according to Mr. Carson, "have had more darn offers to buy land and make mortgage loans since I got them their own telephones," he said.

•

NO PURPLE PINKIES, PLEASE! The finger is a small, but nimble tool found around the outer edges of the hand—so goes a knowing definition of this human appendage.

We are further informed that it is useful for pointing, for dialing, for scratching, and for eating peanuts.

Useful as it is, it is difficult to keep a finger out of pinchers, out from under a hammer, or out of cracks in doors, so—"Guard that finger" was probably the first safety slogan.

Change of Address

Please notify your local postmaster and the Circulation Department of TELEPHONY (608 S. Dearborn St., Chicago 5, Ill.) of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
1901 — 60 years — 1961

Oct. 21, 1961

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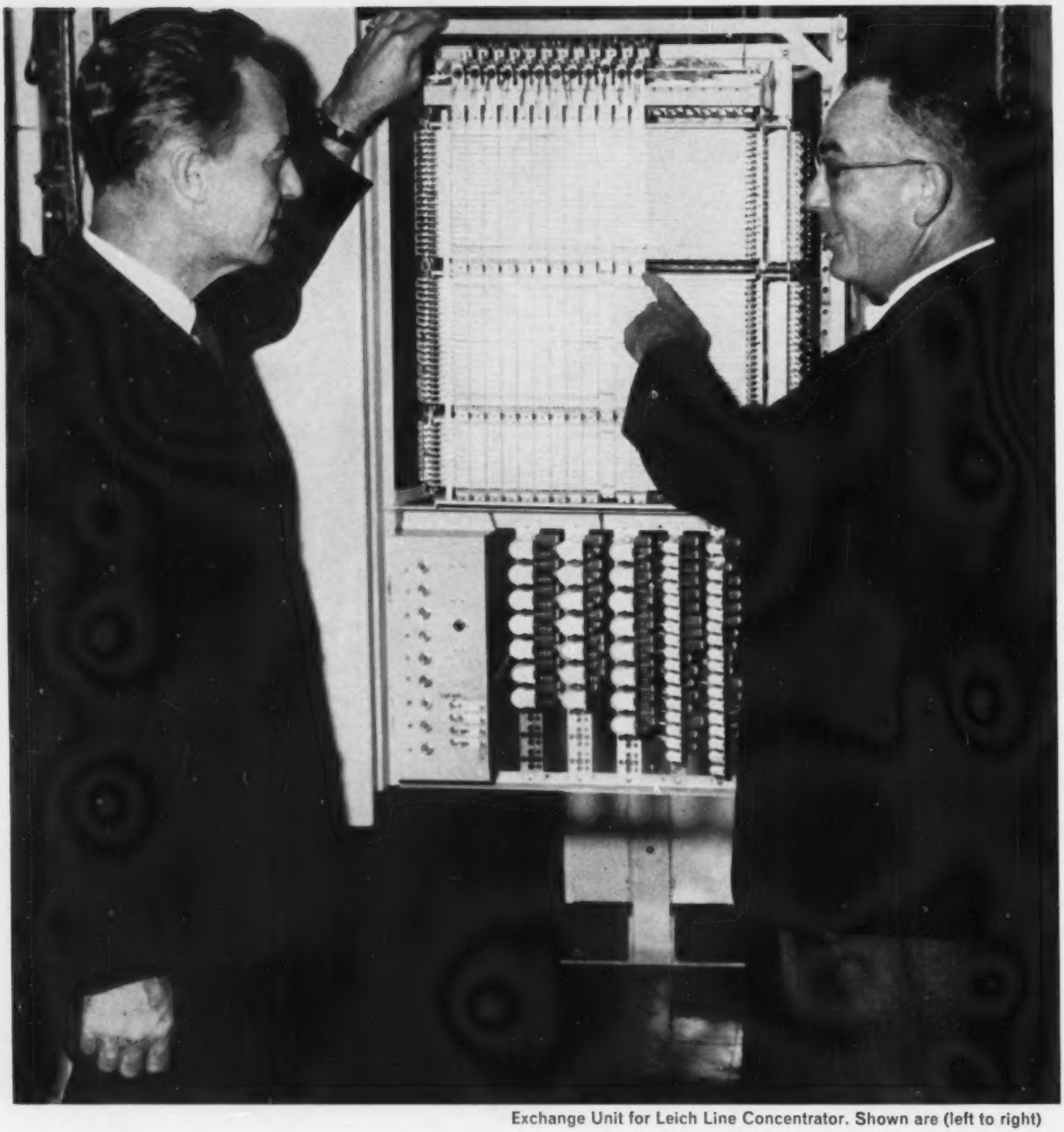

Exchange Unit for Leich Line Concentrator. Shown are (left to right)
J. H. Shultz, General Manager and Arthur F. Brubaker,
Plant Superintendent, Rochester (Ind.) Telephone Co., Inc.

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It used 15 pairs (12 traffic trunks and 3 control trunks) of the existing 26 pair cable to furnish 49 lines—28 in service and 21 available for future growth. Four of the remaining original eleven pairs were used as high usage lines in the area, leaving seven spare pairs. Mr. Brubaker increased his original 26 lines to a total of 60—for a net gain of 34 lines!

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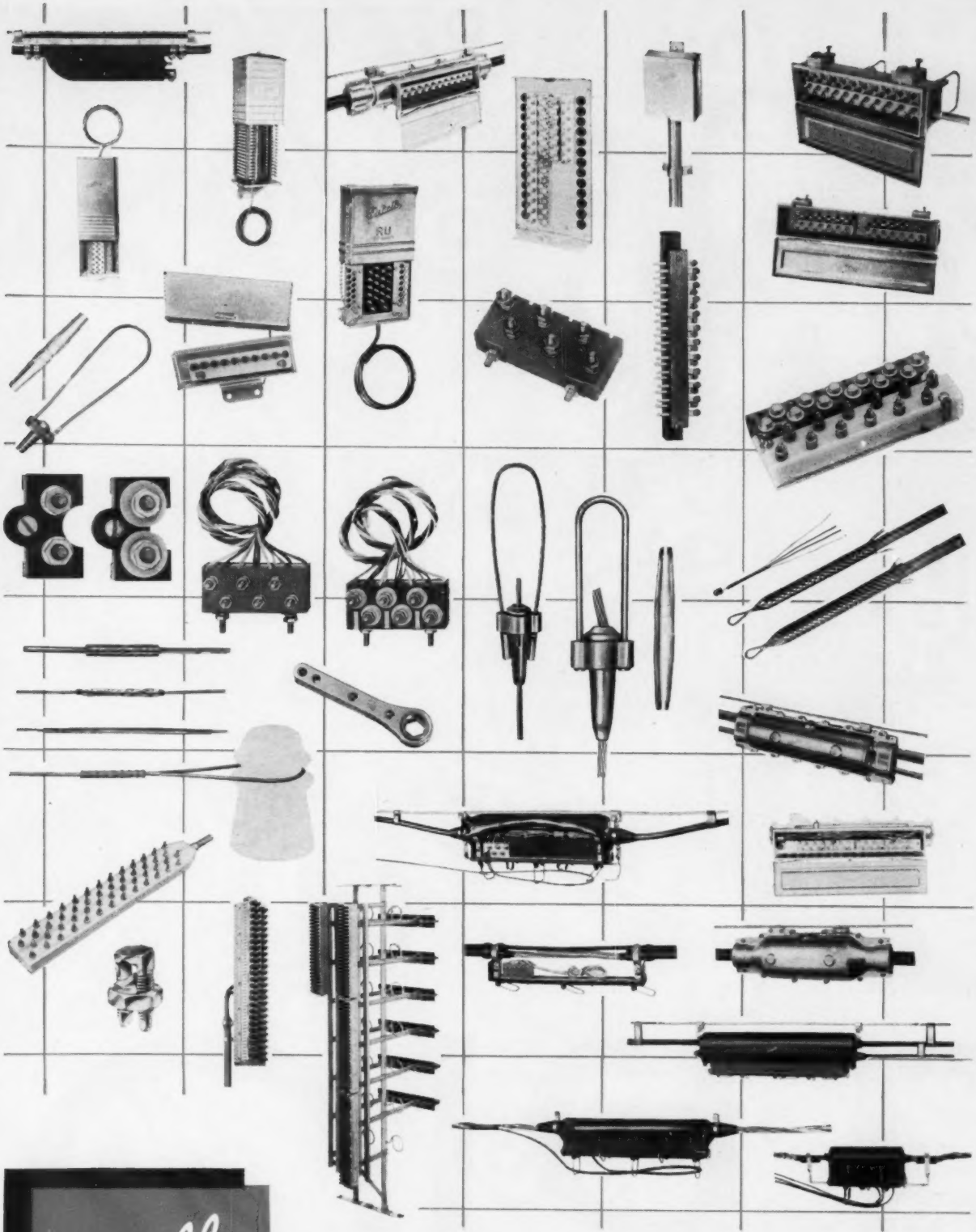

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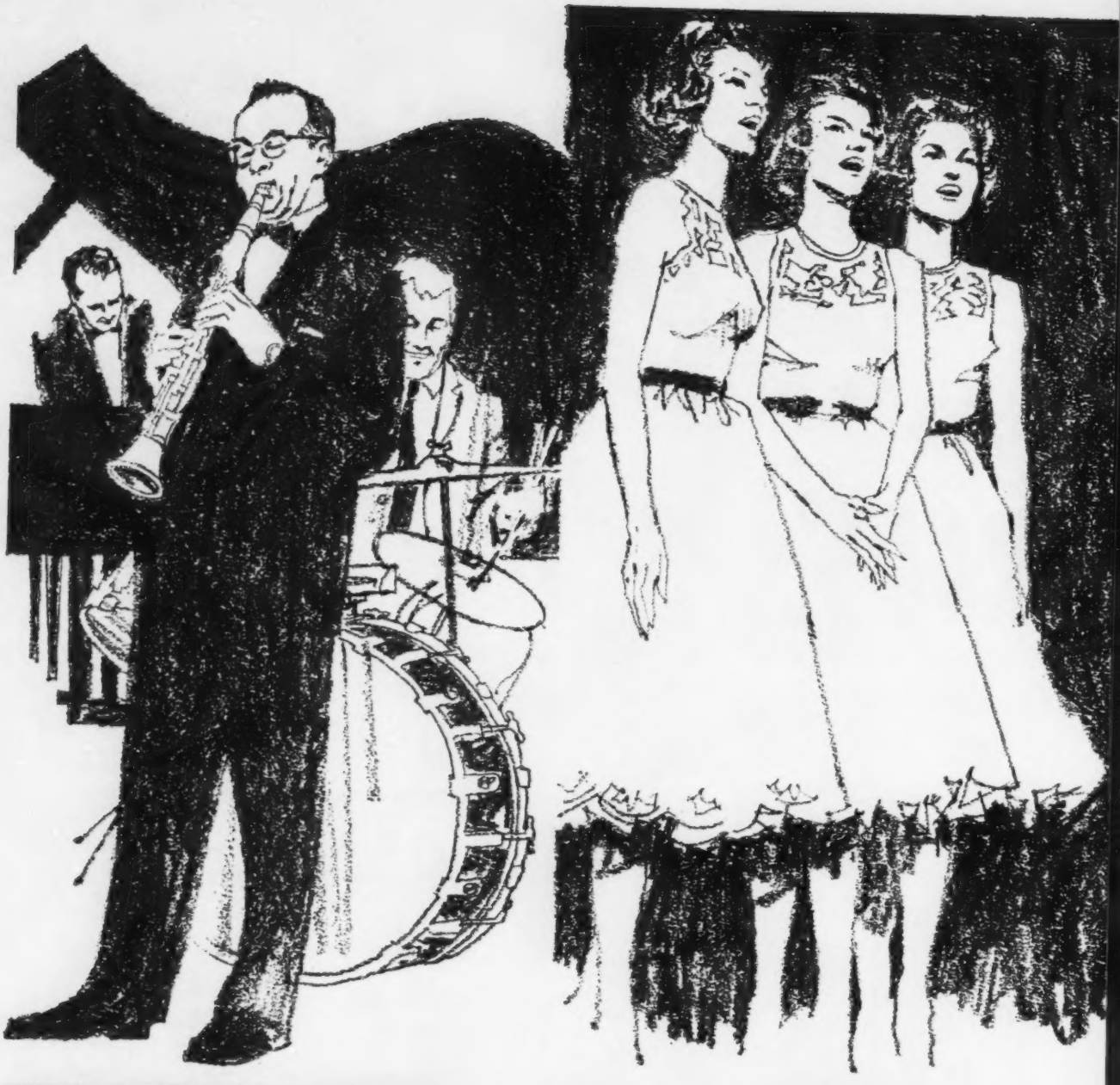

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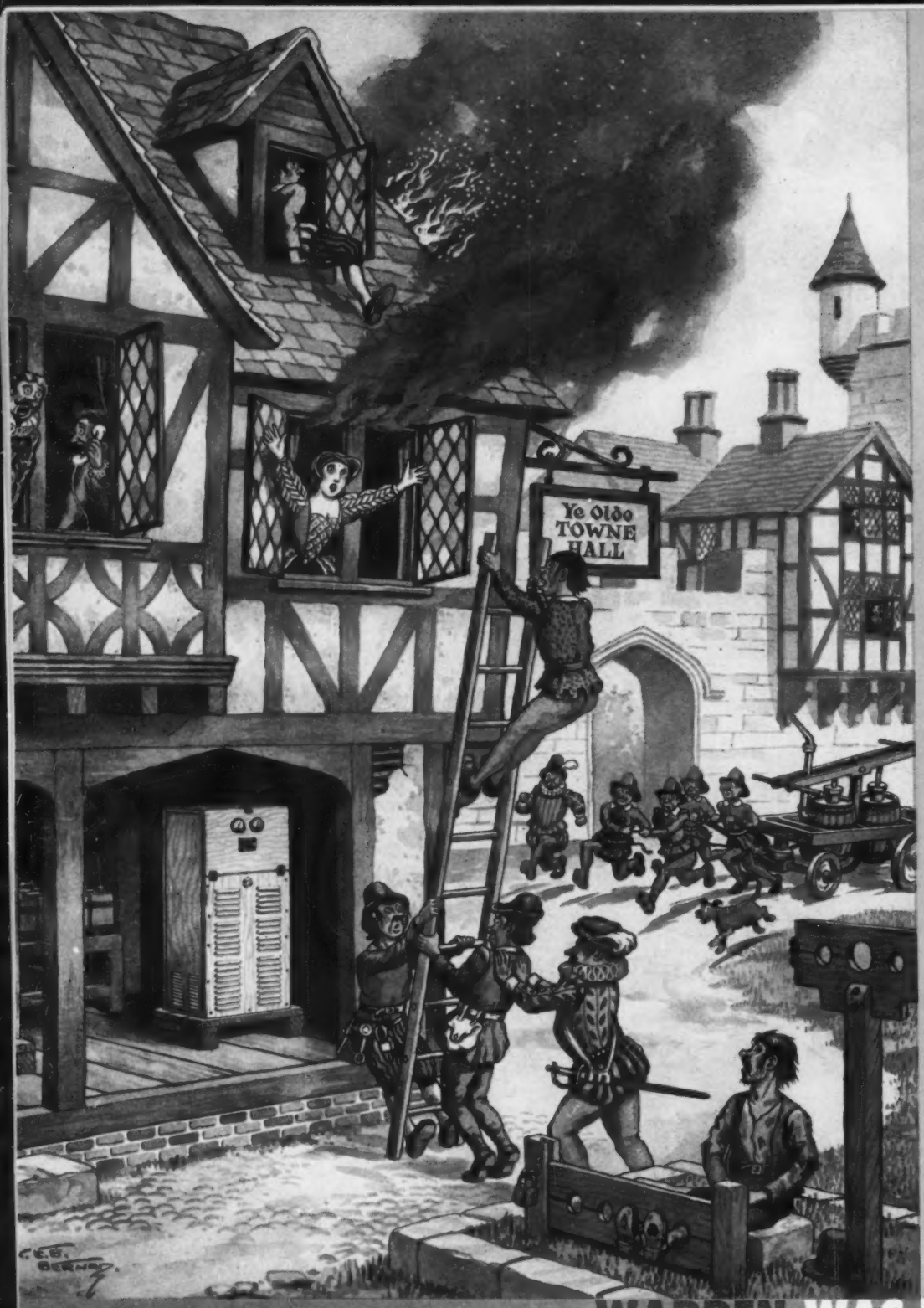

NO. 9 OF SERIES

* The gentleman in the foreground is Sir Walter Raleigh, long famous as the man who introduced the joys of smoking to 16th century London — with the immediate consequences you see here.

The equipment you see in the foreground is the WARREN 3-phase TFR, a transistorized battery charger first introduced to the telephone industry by Warren, and with consequences immeasurably happier: specifically, more reliability, longer life, and more efficiency than had ever before been available to the industry.

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FIRST IN TRANSISTOR PRODUCTS FOR THE TELEPHONE INDUSTRY

"TARGETS FOR TOMORROW"

Reviewed at USITA Convention

By R. C. RENO

THE TITLE on the program of the 64th annual convention of the United States Independent Telephone Association—"Targets for Tomorrow in Communications"—certainly encompassed and summarized the various subjects discussed and featured at the convention's general sessions and departmental conferences.

The convention was held at the Conrad Hilton Hotel in Chicago Oct. 9 to 11.

Again the Independents' meeting presented a preview of "things to come" in every phase of communications. Even though some of the developments already have been introduced, they have been modified and expanded, making it necessary for telephone companies to constantly keep abreast of changes that are being made and will be made in techniques and equipment.

The broad range of subjects discussed at the convention included merchandising and selling telephone services, changes in accounting procedures, financing, regulation problems, toll settlements and separation studies, joint-use of facilities agreements with power companies, microwave and mobile radio, Direct Distance Dialing, buried wire and cable techniques, and many others.

The reader can receive the benefit of the convention discussions by reading this "convention-in-print" issue, which includes every convention paper except one, which was not available.

There were three important themes emphasized at the convention, which should have the attention of every member of the telephone industry. They are:

(1) *Private Enterprise.* It is important for businessmen, including those in public utilities, to become interested and active in political affairs and government in order to protect the American private enterprise system. This is especially important today when so many unwarranted attacks are being made on business, and with certain government leaders and members of Congress endeavoring to bring about government ownership of the satellite communication system, which could be an opening wedge for government intervention in the telephone industry.

(2) *Competition.* Telephone companies should realize that, to meet increasing outside competition, the industry must accelerate the improvement and expansion of an integrated communications service, both locally and nationally. All telephone companies must constantly plan for more modern equipment and techniques and must adopt a broader concept of communications service in order to meet the growing competition.

(3) *REA Loan Policies.* In view of rumors and other indications that REA may, in the future, favor cooperatives instead of commercial companies in making loans for rural telephone development, the industry should exert pressure on the REA administrator to continue giving loan preference to existing, tax-paying commercial companies.

One of the features of the USITA convention was the premier showing of the association's new movie—"The Independent."

The movie was produced and designed by Parthenon Pictures of Hollywood, Cal., under the direction of the USITA Advertising Committee, and copies of the film are available to Independent companies for showing before local groups, employes and schools in their territories.

The movie tells a story of a typical family-owned and operated Independent telephone company, from its beginning to its cut-over to dial operation.

It is a warm, personal and humanistic story of the managerial, technical and financing problems and progress of the company. It is one that should generate interest in and support for any Independent as a "respected member of the world-wide communications network and as a strong-rooted member of the local business community, dedicated to its best interests . . . a good place to work, and a good business to invest in."

The film is 16 mm, in full color and sound, 28½ minutes long, and it can carry a company-name identification at the beginning and end.

Through arrangements made by the USITA, copies of the film may be rented or purchased from the Parthenon Pictures, Print Department, 2625 Temple St., Los Angeles, Cal., at the following prices:

Purchase Price

Single color prints, each $125.00
Two to 10 color prints, each 117.50
(Black-and-white prints ..Less 40%)

Prices include reel, can and case; coating and Protecto self-cleaning leader.

Parcel post, prepaid; or air-express, collect.

SPECIAL FIRST-RUN PRICE. Single prints ordered before Nov. 1, 1961, hence "clubbed" at the lab with other initial orders into a bulk run, may be billed at the bulk-run price of $100 each.

Company Title Identification

The producer will make up and attach to the beginning and end of each print, credit titles bearing the name of renting or purchasing company, in the same de luxe color and design as the regular titles. The *head* credit will read "Your Company Name . . . One

of the Nation's Independent Telephone companies . . . . Presents". The end credit will read—"Your Company Name . . . An Independent Member of the Worldwide Communications Network." The cost of these credit titles will be $15 for the first set; $3.00 for subsequent sets to buyers of several prints.

Rental Arrangements

For companies whose communities do not warrant the purchase of a print, and for non-members, USITA is depositing 50 prints with the producer for rental circulation. The rental fee is $25, check with order, and the rental period is one week, during which any number of showings may be made. Dates will be filled in the order in which the requests are received, and there may be some delay in the first months of release. If the renter should decide to purchase the print before its return, the rental fee will be applied against the purchase price, and the company-name credit titles can be supplied.

The following USITA directors were re-elected by the convention: J. Ballard Atherton of Honolulu, Hawaii, E. G. Bellamy of Knoxville, Ia.; C. D. Brorein of Tampa, Fla.; J. C. Hageman of Lorain, O.; P. H. Henson of Kansas City, Mo.; Harold C. Payne of Export, Pa.; C. C. Pearce of Riceville, Ia.; R. E. Rudolph of Ellensburg, Wash.; H. M. Stewart of Cornelia, Ga.

Newly-elected directors are T. A. Saunders of Muskegon, Mich.; Max E. Wettstein of Ocala, Fla., and Clare E. Williams of Marion, O.

Other directors are: H. G. Allen of Milton Junction, Wis.; D. F. Anderson of Geneseo, Ill.; F. S. Barnes of Rock Hill, S. C.; H. A. Barnhart of Rochester, Ind.; H. R. Bollinger of Waconia, Minn.; C. R. Cashel of Worthington, Minn.; M. A. Clay of Lufkin, Tex.; L. D. Densmore of Lincoln, Neb.; H. C. Ebaugh of Havre, Mont., C. D. Ehinger of Decatur, Ind.; R. J. Fegan of Junction City, Kan.;

C. W. Haas of Big Timber, Mont.; Merle M. Hale of Lincoln, Neb.; W. C. Henry of Bellevue, O.; H. Dail Holderness of Tarboro, N. C.; W. A. Kern of Rochester, N. Y.; F. G. LaPrade of Martinsville, Va.; R. A. Lumpkin of Mattoon, Ill.;

F. B. McHenry of Jefferson City, Mo.; Kelley McNish of Bristol, Tenn.; P. A. Nenzel of San Francisco, Cal.; R. J. Schafer of Pinconning, Mich.; A. R. Stacey of Sunland, Cal., and W. G. Winters of Houston, Tex.

The USITA directors elected the following officers for the ensuing year: president, Frank G. LaPrade of Martinsville, Va.; first vice president, H. R. Bollinger of Waconia, Minn.; second vice president, R. E. Rudolph of Ellensburg, Wash.; third vice president, Paul H. Henson, of Kansas City, Mo.; executive vice president, Clyde S. Bailey of Washington, D. C.; treasurer, C. D. Brorein of Tampa, Fla., and secretary, Courtney S. Snyder of Washington, D.C.

At the closing session of the convention, Immediate Past President C. C. Pearce was presented a plaque, in behalf of the USITA, by Director Harris G. Allen, in recognition and appreciation of Mr. Pearce's service as president of the association during the past year.

The USITA directors voted to hold next year's convention on Oct. 21, 22, 23 and 24 at the Conrad Hilton Hotel in Chicago.

The Independent Telephone Pioneer Association held its annual meeting during the USITA convention, during which the Pioneers and USITA paid tribute to Executive Secretary-Treasurer Mayme Workman, who announced her retirement from the association position effective Dec. 31.

A full report of the meeting will be published in next week's issue.

The Pioneers elected the following directors: H. R. Bollinger of Waconia, Minn.; W. H. Loomis III of Des Plaines, Ill., and F. G. Winters of Houston, Tex.

Other directors are: Ray Blain of Falls Church, Va.; J. N. Johnson of Fort Myers, Fla.; C. C. Pearce of Riceville, Ia.; Bertha B. Blair of Ephrata, Pa.; H. A. Barnhart of Rochester, Ind. and C. E. McCormick of Erie, Pa.

The Pioneer directors elected the following officers: President, Mr. Blain; vice president, Mr. McCormick; vice president, Mrs. Workman, and executive secretary-treasurer, Sophia K. Davis of Springfield, Ill., who has served as assistant secretary and assistant treasurer for the past year.

As in past years, in order to provide a permanent record of the convention proceedings for those who did not get copies of addresses, and for those who were unable to attend the convention, TELEPHONY is publishing in this issue, all addresses given at general sessions and conferences, of which copies were available.

NEW USITA DIRECTORS

Re-Elected

J. BALLARD ATHERTON, Honolulu, Hawaii

E. G. BELLAMY, Knoxville, Ia.

C. D. BROREIN, Tampa, Fla.

J. C. HAGEMAN, Lorain, O.

P. H. HENSON, Kansas City, Mo.

H. C. PAYNE, Export, Pa.

C. C. PEARCE, Riceville, Ia.

R. E. RUDOLPH, Ellensburg, Wash.

H. M. STEWART, Cornelia, Ga.

Newly-elected

T. A. SAUNDERS, Muskegon, Mich.

MAX E. WETTSTEIN, Ocala, Fla.

C. E. WILLIAMS, Marion, O.

NEW USITA OFFICERS

President
FRANK G. LaPRADE, Martinsville, Va.

First Vice President
H. R. BOLLINGER, Waconia, Minn.

Second Vice President
R. E. RUDOLPH, Ellensburg, Wash.

Third Vice President
P. H. HENSON, Kansas city, Mo.

Executive Vice President
CLYDE S. BAILEY, Washington, D. C.

Treasurer
CARL D. BROREIN, Tampa, Fla.

Secretary
COURTNEY S. SNYDER, Washington, D. C.

USITA EXECUTIVE COMMITTEE

FRANK G. LaPRADE, Martinsville, Va., Chairman.

H. G. ALLEN, Milton Junction, Wis.

E. G. BELLAMY, Knoxville, Ia.

H. R. BOLLINGER, Waconia, Minn.

C. D. BROREIN, Tampa, Fla.

L. D. DENSMORE, Lincoln, Neb.

W. C. HENRY, Bellevue, O.

P. H. HENSON, Kansas City, Mo.

P. A. NENZEL, San Francisco, Cal.

C. C. PEARCE, Riceville, Ia.

R. E. RUDOLPH, Ellensburg, Wash.

1961-62 Officers Of United States Independent Telephone Association

FRANK G. LAPRADE
President

HAROLD R. BOLLINGER
First Vice President

R. E. RUDOLPH
Second Vice President

PAUL H. HENSON
Third Vice President

CLYDE S. BAILEY
Executive Vice President

CARL D. BROREIN
Treasurer

COURTNEY S. SNYDER
Secretary

The Changing Facade Of Communications

By CLIFFORD C. PEARCE*

I COME BEFORE you with mixed emotions. Mixed emotions can best be defined, perhaps, as those experienced by the deep sea diver who, when he was 300 feet down, got a message from the deck saying: "you'd better come up, the ship is sinking." However, I know that our ship isn't sinking, and that precious knowledge gives me courage to proceed with the president's traditional address.

In a very simple way, I want to talk to you today about some rather important changes taking place in our industry.

This has been an eventful year. As Mr. Bailey has told you, I have set something of a record for "USITA presidential miles traveled." As your good-will ambassador, I have attended numerous conferences, committee meetings and state association conventions, having been jet-propelled from the craggy Adirondacks of New York to that paradise of the Pacific, Hawaii; from the magnificence and grandeur of Alaska at the top of the world to the lush, green tropics of Florida; from the splendor of the Pacific Northwest to Texas, that great state of oil wells, ranches and millionaires.

I have savored the mint-juleps, rolling hills and white board fences of Kentucky and the beauty and glamour of the deep, deep south. I have relaxed in the glittering setting of famous Las Vegas, and have beheld the scenic beauty and the lofty peaks of the glorious mountain states.

It was my pleasure to be welcomed by those prosperous and lovely states of Indiana, Ohio and Michigan; and last but not least, I have had the enjoyable experience of appearing at the fine conventions in my home state and in my own midwest.

I wish it were possible for each person who is in any way connected with Independent telephony to enjoy the honor that has been bestowed upon me during the past 12 months. I wish it were possible for each of you to see our dynamic industry as I have been privileged to see it, and for each of you to come into working contact with the keen minds of the members of the board of directors whom I have been privileged to work with. I wish each of you could be privileged to witness the inner workings of our highly efficient and competent staff in our Washington office as has been my pleasure.

I want to express my heartfelt appreciation to you men and women of Independent telephony for elevating me to the highest office you have to give. It has been a rewarding and stimulating adventure, and one which I shall always remember.

Incidentally, just why I was accorded this distinction in the first place I don't know. But I have not worried about it much because as George Ade, the Hoosier humorist, once said: "Man is never so dismally employed as when he is proclaiming his own unworthiness." The trouble is he may prove his case. When the Heavens open and a great boon descends upon him—and knocks him groggy—the only thing for him to do is to act as though he expected it sooner. Ade also admonished: "If you find a laurel wreath upon your brow leave it lay there, don't ask why are they doing this to me: rather, how can I get through it without being apprehended."

Seriously, I have greatly enjoyed this job of mine for many reasons, one of them being that it has afforded me an opportunity to be of greater service to our Independent industry and to observe Independent telephony in action as few people are privileged to see it. I am a better telephone man, for I have learned many things about our business and the people in it I never knew before.

While new men and new ideas are constantly appearing in the communication equation, I am proud and pleased to note that the telephone group as a whole shows a *continuity of purpose, a determination to carry on certain traditions,* which are bound to be influential in coming years, just as they have been influential in the past.

I would like to pause for just a moment to reflect upon the instrument that really brings us together—this miracle, this boon to civilization that we call the telephone.

Someone has said that since the curtain went up on human history, no single thing has exerted a more far-reaching influence on the life of the average person than has the telephone. Eighty-five years have come and gone since Alexander Graham Bell invented what was then regarded as a scientific toy, but what has since become an indispensable tool in our daily life. During these 85 years our country has changed and so has the telephone.

Today, the telephone is the *lifeline,* the *heart,* and the *voice* of busy, everyday America. It puts the unity in national defense. It dwindles distance. It is friendliness and security. It is so deeply interwoven in the warp and woof of America that if any of our countrymen were asked to name our greatest invention they might overlook the telephone. It is like the air we breathe—taken for granted—and almost as essential to our well-being. The romance of the long distance call, abridging space, may remind us of its wonders, but its everyday, routine use has made the telephone as accepted—and as commonplace—in its benefits as water running through a faucet.

It links cities and continents. But it is through being so deeply imbedded in everyone's daily habits that the telephone has become an unconscious reflex action in our way of life. No one gives it a second thought as he summons the doctor or police, as high-schoolers relive their wondrous days in

* Mr. Pearce, USITA President (1960-61) is President of Farmers Telephone Co. of Riceville, Ia.

long, long reminiscing, as the doctor clarifies his handwriting on a prescription for a druggist, as reporters call in on their vigilant rounds, and as shopkeepers order their goods. Seldom do we stop to think of the daily miracle of voices transmitted by wire—or air—as we talk to each other remotely, the entire voices of a city intertwined in commerce, friendship, and all human exchange by this now prosaic part of living.

Incidentally, only last evening I had a personal experience which illustrated to me that the telephone is, indeed, a handy gadget. In my room upon the 19th floor of this huge and hospitable hostelry I picked up my copy of the Gideon Bible, and while thumbing it I found pasted inside the front cover a sheet which said, "if you are lonely and discouraged, read Psalms 23 and 27." Well, after I read the Psalms I discovered a pencilled note in a fine feminine hand in the margin which said, "if you are still lonely and discouraged, phone Wabash 1943." Well, I have not been lonely and discouraged yet, but I saved the number, just in case.

Those of you who listen to the Garry Moore show on TV and radio are familiar with his reference to things past as "that wonderful year." Certainly this has been a wonderful year for the communications business and 1961 will go down in the record books as one of the most significant in our history.

Many things happened in 1961. Foremost among them, I think, was our increased awareness of the fact that at long last we are face-to-face with direct competition, and some mighty stiff competition at that. In fact, many of our leaders believe the greatest challenge facing the telephone business today is to accelerate the improvement and expansion of an integrated communications service, both locally and nationally, in order to meet increasing outside competition.

Men prominent in both branches of the industry are viewing the situation with alarm. All telephone companies must constantly plan for more modern equipment and techniques and we must acquire a broader concept of communications service.

We must realize that our very existence depends on providing total communications service. Conversion to dial no longer is the ultimate.

We are well equipped to meet the challenge of this new communications era. With WATS, TELPAK, Dataphone and DEFT (dynamic error free transmission), the revolutionary new technique for high speed transmission, supplementing the solid foundation of our existing offerings, we have what the customer needs and wants. Success is certain if we do our marketing job as efficiently as we have run the operating side of our business in the past.

However, we telephone people must be determined to avoid the trap of regarding our competitors too lightly. Industrial smugness has put too many businesses in the red. If you had told the railroad tycoons 60 years ago that in 30 years they would be flat on their backs, broke, and pleading for government subsidies, they would have thought you totally demented. Such a future was simply not considered possible. It was not even a discussable subject. The very thought was insane. Yet a lot of insane notions now have matter-of-fact acceptance. For example, the idea of 100-ton tubes of metal moving smoothly through the air 30,000 feet above the earth, loaded with 100 sane and solid citizens casually drinking martinis sounds fantastic, but it has dealt cruel blows to the railroads.

The man who *once* read proof for *Collier's* magazine—the man who *once* operated lighting for Republic pictures—these men know something of the force called competition. But the knowledge came too late.

Fortunately, there is a bright side to our picture. We should take our cue from Chairman F. R. Kappel of the AT&T who says,: "So far as the Bell System is concerned, we intend to give this country such a quality and quantity of communications that business and government and everyone all over this land will find it impossible not to use them to ever-increasing advantage. You are going to find that the means for communicating all forms of intelligence—words, pictures, documents, data of all kinds, everything—will surpass anything you have ever dreamed of."

"This won't happen in five minutes," he said, "but we shall work at it and work at it and work at it and work at it and we will bring it about."

To meet the present and future requirements of our customers the industry has available or will have a whole new array of services and products. Unless you have seen the Bell System's experimental electronic central office in operation at Morris, Ill., you ain't—if I may use the vernacular—you ain't seen nuthin' yet. Actually, Morris' subscribers are getting a five-year preview of telephone service of the future. This newest marvel of communications magic is all-electronic. Calls are switched in *millionths* of a second instead of thousandths, as at present. Moving or wearing parts are largely eliminated. The system can diagnose its own troubles, and it provides an unbelievable variety of new and additional services for subscribers.

Certainly the service improvements and service expansions of the past and present can never be halted as long as the telephone industry builds for the future. Today there is no saturation point in sight. The public appetite for communication service grows with every extension and improvement of that service.

Whenever I contemplate the wonders of these fabulous and fantastic communications tools of the future, I call to mind the school boy who was seeing a chicken incubator for the first time and who was intently watching a baby chick peck its way out of its shell.

The boy's teacher said: "isn't that wonderful—doesn't that intrigue you?"

"No," replied the youngster, "what

Left to right: J. B. Haley of Austin, Tex.; Mrs. K. W. Vogt of St. Paul, Minn.; Mr. Vogt, and E. B. Samp of LaCrosse, Wis.

T. A. Boyd (left) of New York City, and Clyde S. Bailey, USITA executive vice president.

State association presidents and secretaries who held a dinner meeting during the USITA convention.

intrigues me is how he got in there in the first place."

I want to talk briefly about another change in the facade of our industry that I observed first-hand. In 1922, there were 9,200 Independent telephone companies. In 1954, USITA ran an ad in *Time* magazine which stated, among other things, that there were 5,200 Independent telephone companies serving America. At the close of 1960, approximately 3,300 companies were in existence, and 9,497,140 stations (or over 83 per cent of all Independent stations) were owned by 423 of these companies, leaving almost two million telephones to be served by over 2,800 companies for an average of about 670 stations each.

By the end of the current year the total number of Independent companies will be less than 3,000. Just how soon we will drop in number to 2,000, to 1,000 and to 500 no one knows. But as sure as death and taxes the day is fast approaching.

This is a day of specialists, mass production, government reports, borrowed capital and a public that doesn't want a product that is second best.

Perhaps consolidation, mergers and acquisitions are the answer, and as we say in Iowa, "the day of the 80-acre family farm is gone, whether we like it or not."

During my travels I was in constant touch with my home and office by telephone—whether in Tampa, Las Vegas, Honolulu, Anchorage, Willow Creek or Little Fork, I merely picked up the telephone and gave my business or residence number plus the area code. In practically every instance the call was completed in a matter of 30 seconds or less, and in every instance the transmission was nearly perfect.

This is the real proof that a *quality* product was made possible by the *co-operation* of all segments of a great industry. Herein lie the two most important ingredients for the continued success of this industry—cooperation and quality. Every telephone company must cooperate to aid in marketing new services and work to improve the service they now provide.

We must work together to meet the desire of every present and future customer by providing him with a product of the finest quality and with a communication service to meet every possible need. Our answer to all present and future competition is—cooperation and quality.

I often hesitate to quote figures in any address. However, if I may beg your patience, I shall speak of the nearly 12 million telephones operated by the Independent telephone industry and the fact that this is double the number we served just 10 years ago.

While we still consider ourselves small compared to the great Bell System, we Independents are the second largest telephone operation in the world. That's right, our combined Independent operation exceeds the number of telephones in the United Kingdom, in France, in Germany, or any other country in the world. It is more than three times the number in all South America. While the Russians may boast of their adventures in space, we Independents operate two telephones for each one in Russia. We are a dynamic, growing industry operating in a great nation.

This growth of today, and the growth of the future, lends a deep public significance to the character of the telephone group which has, and will continue to have, the destiny of the communications art in its keeping.

The Bell System and the Independents combined operate more than one-half the telephones in the world. This has come about, not under government ownership or government direction, but under the free enterprise system where the individual is rewarded in proportion to the sweat and effort he puts forth and is free to enjoy the fruits of his labor.

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- Stock supply in 10, 20, 21, 50, 51, 100 and 101 pair sections.
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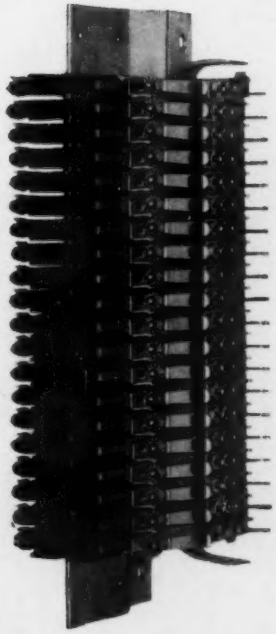
Cook 3800 Central Office Protectors—Standard of the Independent Telephone Industry.



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It has come about because we live in a country that operates under the greatest document every written by man—the Constitution of the United States. Therein lie the fundamental principles which have given us the blessings we hold so dear. We need build no walls around our borders to hold our people.

Here, profit is the oil which turns the wheels of progress, keeps grass from growing in the streets, fills vacant buildings, puts bread on the table, pays for each penny that goes into every government project, and pays every dollar in salary to every government employe, including the President of the United States.

Measured by any standards, our private enterprise system has done a mighty fine job for our country, our customers, our owners and our employes.

Our accomplishments, I believe, are the natural result of dynamic business in a free society. When you put together the combination of a fundamental service concept, forward-looking objectives, dedicated hard-working employes and basic research in a free competitive society with minimum government intervention, you get results.

In my opinion, no one is better equipped to preach the gospel of free enterprise than the men and women of Independent telephony and there is no more outstanding example of the American way of life than our 3,300 Independent telephone companies most of which are represented here today.

The carping critics who are downgrading our country are wrong. The unbiased evidence clearly proves that today the United States is first in military might—first in economic and industrial power—first in moral leadership. Only our lack of effort, lack of vision, or lack of intestinal fortitude, can ever topple us to second place. Only the deluded fault-finders complain that America is on the skids.

These members of the USITA Washington headquarters staff are, from left to right: Mervin Alexander, settlements coordinator; T. R. Warner, radio engineer, Mary Lee, and C. S. Snyder, secretary.

They are the faint-hearts who wail that America is a second-rate power. Always their reaction to communist propaganda is to sell America short.

In three short centuries, under our free political and free economic system, we have grown to be the world's greatest power. No nation in history ever has duplicated—or even approached—our record of material and spiritual progress. No people have ever given so much of their own substance to help less fortunate nations remove illiteracy, hunger and disease. America, alone of all nations, spent its blood and treasure to win two world wars, and after each victory demanded no indemnities, no territorial grabs, no enslavement of conquered peoples and no domination of their governments.

Economic security—the dream of all past ages—is steadily coming true in free enterprise America where private capital, labor, and consumer all share the golden harvest.

The spark plug of this record progress has been freedom—freedom from tyranny of dictatorship—freedom in political action—freedom in economic enterprise—freedom that releases all the productive genius of the American people.

The American free enterprise system does not exploit the common man—it gives him an opportunity to make a better way of life for himself. This system has endured for 177 years and has brought us the greatest blessings the world has ever known.

What about the future?

No doubt, the future of the communication art holds wonders equaling, perhaps surpassing, those which have already entered the pattern of existence.

Apparently our industry is destined to grow as long as the United States grows—certainly it will continue to grow as long as individuals and groups, through improved communications, find it possible to increase production and sales, leisure and wages, profits and the pleasantries of life.

The future can be even more wonderful than the present, if we don't betray freedom. If we don't pull the shut-off switch on the generative force of our marvelous growth, the best years of our lives and of the telephone industry can be—not behind—but *ahead*.

These members of TELEPHONY's staff are, left to right: H. D. Fargo Jr., Mayme Workman, Larry Hogan, and Dan Fargo.

Tact Is Versatile

"Tact is one of the first of mental virtues, the absence of which is frequently fatal to the best of talents. Without denying that it is a talent of itself, it will suffice if we admit that it supplies the place of many talents." —SIMMS.

Excerpts from Report of

USITA Executive Vice President

By CLYDE S. BAILEY

OVER THE YEARS it has been my practice in this manner annually to give an accounting of the association's stewardship. The task of doing this is not always easy, owning to the large number of activities in which we are engaged and the need, if the written account is to be read, for selecting the more important for discussion and leaving others to be imagined. . . .

Included in the association's membership are 810 Independent telephone operating companies, 53 more than this time last year, seven holding companies, and 137 manufacturers and suppliers. Our total membership of 954 is the largest in the association's history. . . . Included in the total membership figure are 234 REA commercial company borrowers and 44 cooperatives. The REA group represents 34 per cent of all operating company members.

Our operating company members represent 87 per cent of the Independent telephone industry in terms of stations in service, 90 per cent in terms of gross revenues, and 89 per cent in terms of plant investment.

Operating Units Decline

The trend toward mergers and consolidations in the Independent industry is rapidly reducing the number of individual operating units and the number of potential members. In 1922, there were 9,200 companies; in 1940 there were 6,400; a year ago there were 3,600. Today there are 3,190. It has been estimated that in another 10 or 15 years there may be only 1,000.

There is an increasing view that the mergers that have been witnessed have strengthened the fabric of Independent telephony and resulted in a higher grade of service to the telephone using public.

The trend has its counterpart in what has happened in the electric, gas, bus, truck, and automobile industries as well as other areas of business activity. Mergers in the railroad field are being increasingly considered.

Although there have been some acquisitions of Independent property by Bell Associated companies, by far the greatest number of mergers have been within our own branch of the industry. . . .

Look at Industry's Growth

Let us take a quick look at the growth of our industry.

	Independent	*Bell System*
Total Telephones	11,428,000	62,989,000
Number of operating companies	3,300	23
Number of exchanges	10,705	6,726
Investment in telephone plant	$4,018,650,000	$24,755,378,000
Gross revenues	$1,019,500,000	$ 8,110,562,000
Number of employes	100,100	594,900

It has been twelve months since we last met in annual convention. The gross revenues of each of 111 companies now exceed one million dollars a year, with the largest company grossing more than 129 million dollars. In another year still more companies will be in the million dollar class. This is testimony to the soundness and growth of the business in which we are engaged. The great body of Independent companies, smaller in stations and revenues but themselves experiencing growth, continue as important parts of the business and social life of the thousands of towns and communities in which they provide telephone service. . . .

Conversions to dial operation are being speeded. Ninety per cent of Independent telephones and 97 per cent of Bell System telephones are already dial. Within just a few years all but a mere handful of telephones will be dial operated.

There are about 147 million telephones in the world, of which 53 per cent are in the United States. New records are being made each year. The challenges of the future are large.

Although from our association's widely circulated pamphlet, "*An American Story*", the figures are somewhat familiar, in a report of this kind it may be well to set out the following tabulation showing the relative sizes of the two segments of the industry in the United States at the end of 1960:

Although the Bell System is by far the larger of the two segments of the industry it is important to remember that the Independents service more than half of the geographical area of the nation. Alaska and Hawaii, our newest states, are served entirely by Independent companies, and Independents now serve five state capitals—Juneau, Alaska, Tallahassee, Florida, Honolulu, Hawaii, Jefferson City, Missouri, and Lincoln, Nebraska.

It is also well to bear in mind that the population explosion all over the country is resulting in increasing demand for telephone service in the smaller towns and rural areas. It is these communities that increasingly are becoming beneficiaries of population shifts. It does not require an optimist to visualize the good things that lie ahead for the Independent telephone companies of the country and the investors who put their savings into these regulated ventures.

One of the important activities of our association is the compilation and

Pioneers in

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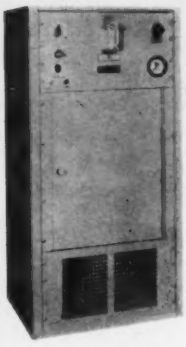
& MAINTENANCE EQUIPMENT

AUTOMATIC REFRIGERATION DEHYDRATORS MODEL "FD" SERIES

These are completely automatic units with an air receiver and intermittently running compressor. Many safety features are provided.

Model	Capacity
FDL	750 SCFD
FDM	1500 SCFD
FDH	3000 SCFD

Write for Bulletin No. FD-1-61

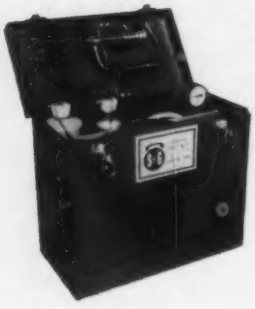


AUTOMATIC DESSICANT DEHYDRATORS MODEL "RC" SERIES

These are completely automatic units with an air receiver and intermittently running compressor. Many safety features are provided.

Model	Capacity
RC	750 SCFD
RCA	1500 SCFD
RCH	3000 SCFD

Write for Bulletin No. RC-1-61



FREON TEST KIT NO. TK-100

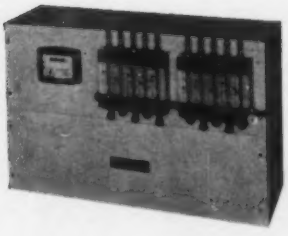
This kit contains complete facilities for charging cables with Freon (F-12), plus: propane type halide gas detector, 20 feet of ½" dia. plastic hose, and a bracket assembly for connecting detector to pruner pole. An extra propane cylinder and 1 lb. can of Freon are also provided.

Write for Bulletin TK-100-1-61

CABLE REEL PRESSURE ALARM PART NO. 8279

Used when cable is plowed in under pressure. When cable sheath is damaged in process of plowing in, the alarm will sound indicating damage of sheath and location can be marked and damages repaired.

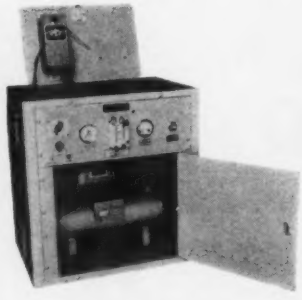
Write for Bulletin No. 8279-1-61



FLOW METER PANEL PART NO. FMP 10

Wall mounted, gives visual reference of how much each cable is consuming plus a volume record meter for the total output of the unit. Each individual flow meter has manual shut-off valve.

Write for Bulletin No. FMP 10-1-61



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Model MWD-350

Write for Bulletin MWD-1-61

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distribution of data relating to the operations of Independent telephone companies. Information for the current statistical volume covering the year 1960 was obtained from most Class A and B companies but not all. Reporting C and D companies represented a small minority of the total stations of such companies.

The number of reporting companies by classes for the year 1960 compared with 1959 was:

	1960	1959
Class A—$250,000 and over	267	245
Class B—$100,000 to $250,000	156	150
Class C—$50,000 to $100,000	84	86
Class D—Under $50,000	43	52
	550	533

Because of the difference in the number of reporting companies from year to year completely accurate comparisons with earlier years are impossible. Yet there are some interesting yardsticks.

Our 1961 statistical volume, reflecting figures for 1960, shows that 267 Class A companies accounted for 9,146,874 stations; 156 Class B companies 350,266; 84 Class C companies 97,421; and 43 Class D companies 20,437, for a total of 9,614,998. This represents a station increase over 1959 of 686,291. The company-owned stations of these 550 companies make up about 84 per cent of the 11,428,000 stations served by 3,300 Independent telephone companies at the end of 1960.

Total plant investment of the reporting companies on Dec. 31, 1960, amounting to $3,539,128,000 was $440,759,000 greater than the amount recorded at the close of 1959. Reporting companies' total plant investment was 88 per cent of the total Independent industry, which was about $4,018,650,000.

In 1960, the reporting companies had gross operating revenues totaling $905,744,000, an increase of $104,455,000 over 1959. Thus, the 550 reporting companies accounted for about 89 per cent of the estimated total revenue of $1,019,500 for 3,300 companies. The revenue of $905,744,000 was derived from the following sources:

		Percent of Total
Local Service	$585,004,000	64.6
Toll Service	289,400,000	31.9
Miscellaneous	31,340,000	3.5

Annual gross operating revenue per station rose from $92.68 in 1959 to $97.03 in 1960 while operating expense, including federal income and other taxes, rose from $75.70 to $78.98. The average revenue per station of the 267 Class A Independent companies was $98.20. It is interesting to note that the average per station revenue in the Bell System was $133.48 while operating expenses including all taxes amounted to $111.26. The ratio of expenses to gross revenue for all reporting Independents was 81 per cent. This compares with 83 per cent for the Bell System.

Operating expenses, excluding taxes, for A, B, C and D Independent reporting companies rose from $488,822,000 in 1959 to $548,406,000 in 1960. The increase in operating revenues exceeded the increase in operating expenses by $44,871,000.

The tax burden amounting to $188,873,000 increased $23,190,000 over 1959. Federal income tax expense amounted to $94,248,000 in 1959, and in 1960 was $107,092,000, an increase of $12,844,000.

The largest increase in operating expenses was reflected in the depreciation account in 1960. This amount was $144,331,000, compared to $123,496,000 in 1959, an increase of $20,835,000.

Income available for fixed charges at the close of 1960 was $175,439,000, compared with $152,952,000 at the close of 1959. Net income available for fixed charges increased in 1960 over 1959 by $22,487,000.

While, as heretofore shown, plant investment in 1960 increased $440,759,000, net income available for dividends increased $13,783,000. Net income available for dividends rose from $103,215,000 in 1959 to $116,998,000 in 1960. The 1960 amount represented a return of 3.3 per cent upon a total undepreciated plant investment for A, B, C and D reporting companies of $3,539,128,000.* For Class A companies above, the ratio of return was 3.4 per cent. In 1959 the return on a plant investment of $3,098,369,000 for all reporting companies was 3.3 per cent. . . .

Field of Legislation

Moving into the field of legislation, I shall discuss several proposals that are of interest to Independent telephone companies.

First, however, let us take a look at the nation's "New Frontier" leadership that was elected last November and came into office on Jan. 20.

President Eisenhower's friends were successful businessmen. President Kennedy's come from society, colleges, "eggheads", artists, writers. The accent is on scholarship. Twenty of Mr. Kennedy's top advisors including three members of his cabinet belong to Phi Beta Kappa. The Eisenhower administration, while sprinkled here and there with people left of center, was essentially a businessman's administration. This has been changed under Mr. Kennedy. To fill important posts, he has drawn liberally upon the professorial world, expecially Harvard. I have not counted them but am of the impression he has a good many more "eggheads" even than President Franklin D. Roosevelt had.

President Eisenhower was affable, friendly, genial, relaxed. He had the father image. Mr. Kennedy has an exterior of austerity, an austerity that comes from substantial wealth and from Boston. He has a sense of history and admires bold doers. His book "Profiles in Courage," a best seller, attests this. He may prove to be a strong President. Need we be reminded that strong men are often impatient of restraint?

Owing much to labor, it may be expected that the doors of the White House will be more open to representatives of labor unions than they were during the past eight years.

This is an administration considerably to the left of what we have had since January, 1953. Someone has counted up a total of 220 Kennedy campaign promises, pledges, priorities and "musts." The more important of these are federal aid to depressed areas, medical care for the aged under social security and financed by increased payroll taxes, federal aid to education, higher unemployment compensation, and minimum wage legislation. Two of these have already found reflection in enacted legislation.

Many persons will concur in the view that with an emergency facing the country, the administration should shelve unnecessary spending. A group of Republican senators have declared "that we cannot afford the fat of social experimentation at this time if we are to develop the sinews of survival." It is also easy to agree, with that great conservative from Virginia, Senator Harry F. Byrd, that the administration should turn its attention immediately to "curtailment of all national defense expenditures which may be desirable but not absolutely necessary."

While still in Congress Mr. Kennedy as the head of a Senate Labor Subcommittee waged a stiff fight for changes in the Landrum-Griffin Labor Reform Act to permit "situs picketing" and emasculate secondary boycott prohibitions. Senator Kennedy was the principal advocate of federalization and broadening of state unemployment compensation systems. He favored additional presidential authority for dealing with emergency strikes including the power to seize industrial plant.

For six of the eight years Mr.

* The ratio of net income to depreciated plant in 1960 for reporting companies was the same as in 1959. Depreciated plant in 1960 for reporting companies was $2,939,723,000 compared to $2,576,195,000 for 1959.

Eisenhower was in office he had to deal with a Congress controlled by the opposition. The likelihood of growing success with the Kennedy legislative program is heightened by the fact that Congress is controlled by members of his own party.

It does not require any great intelligence to forecast that the business interests of the country have their work cut out for them in the next four years, maybe eight. Business and industry generally must keep doubly alert to insure that their views shall be presented on all issues affecting the free enterprise system. In the legislative areas in which our association and the telephone industry are interested the going will not be easy.

Legislation of Interest

There were nine areas of legislation of interest to Independent telephone companies at the session of Congress which adjourned last month:

(1) The 10 per cent excise tax on telephone service.
(2) Minimum wage legislation and dilution of the switchboard operator exemption.
(3) The President's broad tax program sent to Congress on April 20.
(4) A bill to penalize destruction of telephone property.
(5) Anti-slug legislation.
(6) R-E-A legislation.
(7) Intervention by the General Services Administration in rate proceedings before regulatory Bodies.
(8) Anti-gambling legislation.
(9) A Proposed "Department of Consumers".

I shall discuss these in the order indicated and state what their status is.

Telephone Excise Tax. No one has anything good to say about the telephone excise taxes. They are inequitable and discriminatory and applied on an essential service and ought to come off. But the tax collector—the government, that is—knows it produces revenue easily, and painlessly if one may judge from the small public outcry. The collection is actually made from telephone users by telephone companies, without a single cent of cost to the federal government. In 1960 excise taxes collected from subscribers of Independent telephone companies totalled approximately $79,516,000.

In the same year, Independent telephone companies paid in taxes, themselves, of all kinds—federal and state income tax, property taxes, gross receipt taxes, social security taxes and all other—more than $200 million.

In June, Congress voted to extend the telephone excise taxes still another year. But for the extension they would have expired by automatic limitation of law on June 30. This was over the expressed opposition of the telephone industry, both Bell and Independent branches, and despite rep-

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Clockwise around table: H. G. Payne, M. M. Hale, R. E. Rudolph, F. G. LaPrade, C. W. Haas, and H. C. Ebaugh.

Left to right: Foster B. McHenry; Clyde S. Bailey (USITA executive vice president); R. J. Fegan, L. D. Densmore, and A. F. Monroe (J. M. Mathes Advertising Agency).

Clockwise around table: J. K. Galloway (REA Borrowers Committee), W. G. Winters, Norman M. Clapp (REA administrator), C. C. Pearce, D. B. Corman (REA Borrowers Committee), and H. G. Allen.

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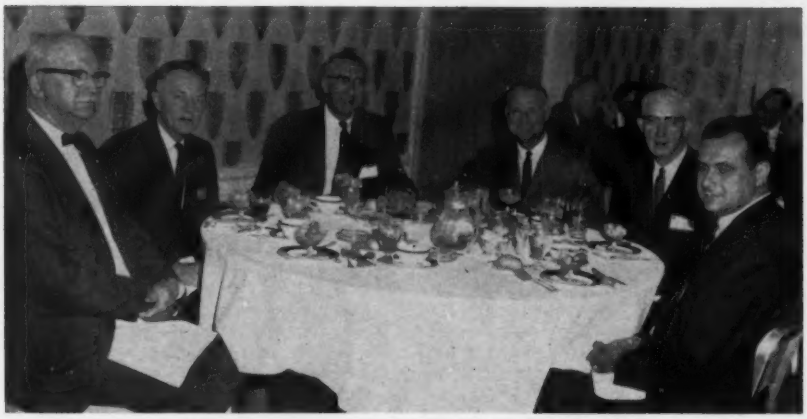
Left to right: C. R. Cashel, P. H. Henson, P. A. Nenzel, M. A. Clay, and F. S. Barnes.



Left to right: H. M. Stewart, K. L. Schroeder, H. R. Bollinger, W. A. Kern, J. C. Hageman, and E. G. Bellamy.

Left to right: D. F. Anderson; C. D. Ehinger, R. J. Schafer, H. A. Barnhart, and A. R. Stacey. (Another photo showing USITA directors R. A. Lumpkin, Kelley McNish and C. D. Brorein did not reproduce).

resentations made by the NARUC, whose member regulatory commissions are legislatively designated guardians of the interests of telephone and other utility users. . . .

It is not necessary to ask ourselves why these taxes were again extended. It was primarily because our nation once more is threatened by a foreign foe and because continued high tax revenues are needed for defense purposes.

The tax extension bill sped through the House of Representatives under a closed rule forbidding amendments on the House floor. It was also acted on by the Senate with expedition. Although separate bills to repeal the telephone and transportation taxes had been earlier introduced in the Senate, they were not formally submitted when the tax extension bill was under debate because, apparently, their authors knew they had no chance at this stage in the country's history and they did not want to go in for an exercise in futility. . . .

Minimum Wage Legislation. Under the impetus provided by President Kennedy while he was still a United States senator and a member of the Senate Labor Committee, followed by the leadership he exerted after he went to the White House, Congress passed new minimum wage legislation on May 5 which became effective at midnight on Sept. 3. The bill was essentially the measure which Mr. Kennedy had introduced and sponsored in the Senate.

For employes already covered by the Fair Labor Standards Act the legislation provides for an increase in the federal hourly minimum wage to $1.15 for the first two years and $1.25 thereafter.

For employes not previously covered a minimum of $1.00 for the first year is required, $1.05 the second year (with time and a half for hours in excess of 44 per week), $1.15 the third year (with time and a half for hours in excess of 42 per week), and $1.25 thereafter (with time and a half for hours in excess of 40 per week).

The bill eliminated various exemptions altogether while whittling down still others. The switchboard operator exemption was rewritten to read:

"(11) Any switchboard operator employed by an *independently owned public telephone company* which has not more than seven hundred and fifty stations." (New language in italics)

The language of the exemption as previously in the law read as follows:

"(11) Any switchboard operator employed in a public telephone exchange which has not more than seven hundred and fifty stations."

The new language was highly objectionable because it deprived any multi-exchange company of use of the exemption when more than 750 stations in the aggregate are operated. We protested the language with the utmost vigor. But our efforts were fruit-

less in the era of the New Frontier. In an effort to avoid elimination or emasculation of the exemption before Independent companies completed their programs of conversion to dial operation, we stated our willingness to accept a termination date; but this plea was rejected.

There are about 5,000 operators who are employed by companies having exchanges of less than 750 stations each. It is this number of operators in the Independent field who were covered into the law. It is the smallest number of affected employes in any of the industries that had the benefit of exemption from the maximum hour and minimum wage provisions of the law. . . .

The switchboard operator exemption was put on the statute books at the request of our Association in 1939, one year after the Fair Labor Standards Act was enacted. It continued on a 500-station exchange basis until 1949, when again at our association's request it was extended to apply to exchanges under 750 stations. The USITA stood guard over it for twenty-two years.

The switchboard operator exemption saved the economic lives of hundreds, indeed thousands, of our smaller companies. But for it many of them would have been driven to the wall. Until this year there was natural sympathy for their plight in the halls of Congress as small business. It was recognized that in the small towns and rural areas where cash incomes were small it would be impossible to establish subscriber rates at a compensatory level if a high fixed minimum wage had to be paid.

In the intervening years there were accelerated programs to convert to dial operation. Of the 11,915,000 telephones in the Independent industry, 90 per cent are now dial operated. This development minimized the hardship through wage savings. Companies that have not yet converted should of course do so with the utmost expedition, even those entitled to the benefit of the exemption in the watered down form. This is demanded not only by public need but by realization that when the next minimum wage legislation is enacted it may be found to eliminate the exemption in its entirety. . . .

The President's Tax Program. On April 20 President Kennedy sent a special message to Congress outlining a proposed broad tax program consisting of a number of items, seven of which are of varying degrees of interest and importance to telephone companies. Some are far reaching in their scope.

On May 9 our association witness, Clyde McFarlin of Montezuma, Iowa, appeared before the House Ways and Means Committee and presented the viewpoint of our association. Dozens of other witnesses appeared during the weeks the hearings were held. Not all of the witnesses but certainly a very preponderant number entered objections to most of the Chief Executive's proposals. Because of the formidable amount of opposition and the controversial character of the desired changes in the tax laws, the House Committee was unable to report out a measure before Congress adjourned. . . .

Left to right: L. D. Densmore, E. A. McKee Jr., both of Lincoln, Neb.; F. H. Fachman of Fort Dodge, Ia., K. L. Dally of Lincoln, Neb., and M. S. Kerr of Fort Dodge.

The seven items of major interest to Independent telephone companies and the position our assocation has taken upon them may be summarized as follows:

(1) *The inequitable and discriminatory telephone excise taxes should be removed.* The tax on this service is the only one upon any household utility. It was supposed to come off at the end of the war. We are terribly afraid it may become frozen into the tax structure on a permanent basis if not repealed.

(2) *We oppose continuation of the 52 per cent corporate income tax.* Its reduction by 5 percentage points to 47 per cent is long overdue and would greatly stimulate a resurgence of business volume sorely needed at this time.

(3) *We oppose the 20 per cent withholding tax on dividends.* It would add tremendously to the paper work of our companies. It would also add to the cost of an essential public service like the telephone without any corresponding benefit to telephone subscribers.

(4) *We oppose the repeal of the dividend credit and the $50 exclusion.* If anything, these items should be doubled in the interest of stimulating the flow of equity money into business like ours and thus create additional employment opportunities.

(5) *We favor a proposed tax credit up to 30 per cent of plant expansion but protest vigorously against exclusion of utilities* including telephone companies. There is no basis in logic for such exclusion.

(6) *We favor the President's proposal relating to cooperatives.* There should be no discrimination in favor of or against any business merely because of the legal form in which it is conducted.

(7) *We look with favor upon the President's proposal to plug up expense account loopholes.* The cost and maintenance of such things as yachts and hide-outs should not be deductible.

Destruction of Telephone Property. The need for surrounding communication property with the full protection of the law against vandals and saboteurs will be apparent to every thinking person. If this is true in peacetime it is even more true in time of national emergency. Communications are essential to the domestic life of a nation. They are indispensable in periors of national stress. The bombing earlier this year of the Bell System's microwave towers in Utah and Nevada points up the seriousness which can attach to vandalism.

This is why S. 1990 which became a law last month was such a welcome measure. Already, communication facilities owned and controlled by the federal government are covered by federal criminal statutes. S. 1990 will extend the protection of federal law to privately owned communication systems even in the absence of emergency. The bill provides:

"Whoever willfully or maliciously injures or destroys any of the works, property, or material of any radio, telegraph, telephone or cable, line, station, or system or other means of communication operated or controlled by the United States, or used or intended to be used for military or civil defense functions of the United States, whether constructed or in process of construction, or willfully or maliciously interferes in any way with the working or use of any such line, or system, or willfully or maliciously obstructs, hinders, or delays the transmission of any communication over any such

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THANKS

to all of you
who stopped
in to see us
in Room 534 at the USITA Convention.
Not all of us could greet all of you,
but we want you to know that we're glad
you came and sorry if we missed you.

John Brown Cook
John Ingmanson
Charlie Cumpstone
Eddie Love
and all your
other friends
at Whitney Blake

WB

New Haven 14, Connecticut
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What's Ahead in Settlements In Interchanged Business

By W. R. JARMON*

IT IS INDEED a pleasure to talk to you on settlements which we all know is a subject of vital importance to every Independent telephone man in the United States. Before we gaze into its future, though, let us consider briefly the changing times.

As I prepared this talk I became convinced more than ever that *telephone* companies, as such, are becoming passé, as extinct as the dodo bird. We are, or should be, in the business of providing complete communications and, in order to survive in this increasingly competitive field, the telephone industry must be prepared to meet the public's needs for any and all types of communications. This includes communications between any two fixed or moving points in the world, on land, by sea or in the air, whether they be within one building, across the street,or thousands of miles apart, and whether they take the form of simple signaling, data transmission or just plain voice. The company which is geared primarily to the provision of so-called "exchange" telephone service will not survive long in the future.

What has this to do with my subject, "What's Ahead in Settlements In Interchanged Business?" Let me suggest a rather obvious answer. Stop and think for a moment how many of our present service offerings are furnished over facilities provided exclusively for a *single* service by a *single* company. Frankly, I have a hard time finding any. Almost without exception, our facilities are engineered, designed and used in common to meet the communication needs of our customers. And, any one of these services using the facilities of more than one telephone company constitutes interchanged business. Generally, when the term interchanged business is mentioned, we think solely of toll service, but all types of services may fall in this category. Moreover, rapid expansion of this business is inevitable in view of the ever-widening circle of social, political and business intercourse coupled with the changes taking place in the way we live and in the methods of running our economy.

Naturally, interchanged business always involves the problem of settlements. That is, just what revenues do we as individual companies get from this joint enterprise, and is it profitable?

Twenty Year Growth

A good measure of the increasing importance of this business is the growth in the amount of settlements, dollarwise, during the last 20 years. In 1940 there were less than four million Independent telephones and total revenues from all of our services were about 117 million dollars. Sixteen million dollars, or about 14 per cent of this revenue, represented settlements for toll traffic interchanged with Bell companies alone. Last year 26 per cent of our revenues were derived from these toll settlements, or 265 million dollars out of approximately one billion dollars in total revenues. In other words, in 1960 these settlements were over 16 times the amount of our 1940 settlements, and what is even more startling they were actually over twice the amount of all the revenues received by our companies only 20 years ago.

What has accounted for this phenomenal increase when the number of telephones served has multiplied only three times during the same period? Expansion in the types of services has accounted for some, extension of interchanged services is another cause, and the greater growth rate of toll is undoubtedly another. But, we should not forget what is probably the most important—the negotiations carried on by the responsible committees and officers of this association supported by Independent companies throughout the nation. I can assure you that increases in settlement levels are the result of hard work and perseverance as they are not generally volunteered by any company nor do they just happen.

As a result of the need to negotiate for increased settlements, toll separations and other forms of cost studies are no longer strangers in our midst. In fact, they have become almost routine. Let me emphasize to you, though, that such studies are vital prerequisites to successful negotiations by either the USITA or an individual company. Without the data produced by these studies, negotiations for increased settlements would be most difficult, if not impossible. We are now preparing to negotiate for a further improvement in the level of settlements. Studies of sample exchanges for this purpose are currently in progress nationwide. It is recognized that these studies mean increased work loads, and we all owe a vote of thanks to those companies contributing so generously of their time and effort.

USITA Separations Manual

Another major advance during recent years was the publishing in 1959 of our own USITA Separations Manual. I am happy to say that this manual is receiving wider and wider application every day. The USITA has had a number of special study procedures during the last few years, but the 1959 manual is the only complete separations procedure ever published by this association. Let me hasten to point out that the procedures recently distributed in connection with the current nationwide A and B studies of selected sample exchanges were designed for that purpose only. They contain certain variations from the USITA manual necessitated by a specific request for additional data neither required nor appropriate in the normal applica-

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Mr. Jarmon is vice president-revenue requirements of General Telephone & Electronics Corp. and chairman of the USITA Settlements Committee.

Your Investment in Regulation

By PETER E. MITCHELL*

IT IS A pleasure to be here and I thank you for this opportunity of visiting with you. As a preliminary ground rule, I will state any ideas or opinions to which I give voice are my own and do not necessarily express or reflect the opinion of the California Public Utilities Commission. We California commissioners prelude our public addresses with this comment to indicate to our auditors just how far the four other commissioners trust the one speaking!

Although speaking to you here in Chicago removes me far enough from California to be considered an expert, may I hasten to assure you I am not. Prior to going to work for the state of California some 13 years ago, I owned and operated, for 21 years, a small business in my native city of Sacramento. I understand the profit system; and, what is more important, I have a real appreciation for the few dollars left in the till after paying expenses and taxes. As a commissioner charged with the duty of regulating public utilities, it is my premise that common sense based on the law and experience is superior and preferable to the theories elaborated on in libraries.

Likens Business To Bridge

Each day, en route to my office, I cross over the Golden Gate Bridge, a magnificent structure spanning that body of water where the calm, blue Pacific Ocean blends with beautiful San Francisco Bay. This highway in the sky literally dangles, being supported by means of thousands of wires suspended from two huge cables. Much of the traffic rolling along this man-made marvel accepts unthinkingly this convenience and evidences little or no appreciation for the know-how or dollars required to plan, promote, construct, develop, and operate it.

Lacking those wires and cables, there would be no bridge connecting gleaming, air-conditioned San Francisco and marvelous Marin County. Without them, the easy flow of commercial life between these centers of population would add up to almost nil.

By flicking my imaginary brain switch, I have no trouble in mentally establishing a relation of likeness between the great suspension bridge and the interlacing network of wires and cables here in the United States which make possible the finest communication system in the world. Although we will soon be bouncing messages off the moon, it is the old commonplace wire and cable method of transmission that keeps the cash registers ringing for our many Independent telephone companies. So, rather than charge into the Jules Verne era or the satellite age, I will try to keep both feet on terra firma and discuss some humdrum matters essential to successfully operating, under regulation, the telephone business.

Two Main Factors In Regulation

"Under regulation" are two big, meaningful words to those engaged in management of telephone properties. The responsibility to serve the public without discrimination, and at fixed rates, are the features which distinguish your "public utility" business from what is generally referred to as "private" business. History will not let us forget that it was against a background of excessive and discriminatory rates and poor service that this regulatory method, which was designed to correct and prevent these abuses, was brought into being. It must be remembered that a public utility is not in the same category, factually or legally, as unregulated business. A public utility exercises an extraordinary privilege granted to it by the state, and it occupies a privileged position. It is charged with administering a public trust. Commissioners charged with the duty of regulating public utilities are likewise charged with a public trust.

*Mr. Mitchell is a member of the California Public Utilities Commission.

Commission regulation represents a development in governmental machinery indigenous to this country. The early regulation of public utilities was essentially restrictive in character. Both in statutory provisions and commission activity, there was an underlying assumption that only the interests of the consumers required protection. Little or no attention was given to the claims of investors or to the long-term ability of the corporation to raise new capital.

Why Regulation?

In a country so militantly defensive of liberty, of the freedom of contract and the control of one's individual property, so strongly devoted to the free play of a competitive market, and acceptance of the survival of the fittest without significant recriminations, the rationalizing of the justification for the extreme restrictions upon the conduct of certain selected businesses has been an agonizing one covering our history from shortly after the Civil War until the beginning of World War II. In times of good business and general prosperity, the fetters of regulation are considered by some to be irritating; in times of recession and depression, they are sought as a haven.

Short-circuiting further philosophical dissertation of this governmental function, let us agree that, in short, the purposes of regulation are to preserve and promote those services which are indispensable to large segments of our population, to prevent excessive and discriminatory rates and inferior service, to allow a reasonable opportunity to make a reasonable profit on a reasonable investment. To accomplish all of this, there must exist a thorough understanding of the job at hand. Failure to comprehend the realities involved, refusing to cooperate with and indifference to the success of our regulatory system, both federal and state, can lead to but one

eventuality—nationalization of the industry. Failure of the regulatory system would bring us to the brink of socialism.

Basic To Private Enterprise

The regulator and those who are regulated have much in common where the reputation of regulatory commissions is the issue. The efficiency and integrity of regulatory commissions' operations are basic to the continual economic development of this country under a system of private enterprise. Promoting efficiency and preserving the integrity of our regulatory system are real and important reasons why the members of this United States Independent Telephone Association must maintain a constant appraisal of the standards and procedures of all regulatory commissions. It is your duty to encourage and manifest an energetic concern with the efficiency of their operation and with their faithfulness to the responsibilities imposed upon them.

As one of those whose decisions are constantly submitted to the court of public opinion, I make it my business to keep my ear to the ground and tuned to reactions. It is my candid opinion that, generally speaking, the people of our country are fairly well satisfied with the way the investor-owned public utility industry operates under existing state and federal regulatory laws. This observation is not intended as a tranquilizer. The situation may well be in hand, but alert and aggressive management dictates constant vigilance. Good public relations is thorough understanding by the public of your function and problems.

Future to be More Complex

As sure as the night will be dark, telephone companies of the future will be bigger, will have more difficult technical requirements, more intense competition, a more complex over-all operation, and the job of tomorrow's managers will be vastly more difficult. Telephone companies will be confronted with problems which will involve all legislative and regulatory bodies and financial institutions in new and unique situations which can only be resolved by the exercise of patience, intelligence, and ingenuity. These problems of management will bring about greater challenges than those generated in the engineering and technical fields.

Of course, to successfully meet the many challenges of growth and management, you must be making a profit. Adequate profits constitute the key to continued growth and development of a public utility. Being repetitious for the sake of emphasis, we must be mindful that in return for the circumstance of making a profit, the public utility company has the ever-present obligation and responsibility of improving steadily its products and services and of providing them at the lowest possible cost to the customer.

Left to right: W. B. Wood, R. A. Russell, R. D. Ayers, all of Dryden N. Y.; W. B. Harrison of Alfred, N. Y.; C. Brooks Peters of New York City; Marvin Braverman of Washington, D. C., and W. Bradford Harrison of Dryden, N. Y.

There is nothing suspect about making a profit. It is the best indication of a healthy business. Publicizing the fact that a public utility company has had a profitable year is not only good news for the stockholders, but also it is reassuring to public utility commissioners, particularly if it confirms their decision. It should be the constant job of management to keep all concerned—investors, customers, and employes—mindful of the fact that it is from profits that money comes for the future growth and expansion of the business. Without profits the money lenders are not interested.

Independents Lead in Growth

It is not only interesting to note, but also important to realize, that the Independent telephone industry is faced with a 25 per cent greater telephone growth problem than is the Bell System. The increase in telephones in the Bell System was 4.8 per cent in 1960, while the increase in the Independent industry was 6 per cent. This is undoubtedly due to the growth of America and its suburban areas where Independents historically have their service rather than in the big cities.

Data processing machines now "talking" to each other at the rate of 3,000 words per minute, micro-wave beams transmitting information at a rate of 1.5 million words per minute, satellites, electronic switching and other advances in the art of telephony, should make us mindful that society benefits most if regulation serves also to encourage innovation and growth.

We are coming to live with new styles of communication service, much of it traditional service in a new wrapping and with new, coined word tags. The introduction of Direct Distance Dialing, WATS, WADS, Telpak and Data-phone, will lead to new methods of merchandising and pricing of voice and data communication. This kind of progress breeds problems, particularly for the small Independent telephone companies. We know they are not going into the satellite or ECO programs for a long time, but they will have to begin thinking about the effects these gadgets, and other rapidly occurring inventions, are going to have on their future operations. It must not be overlooked that many of these service improvements will have a compelling impact on toll users.

Buyers' Market Rules

To meet the problems, and to seize the opportunities occasioned by these many improvements and inventions in the art of telephony, management will have to be alert and progressive. The days of mere order taking are over in the telephone business. In the face of a type of competition not dreamed of a few years ago, Independent telephone company management will have to evidence a progressive attitude and a practical flexibility to conform with the requirements of a buyers' market.

Virtually all companies in the industry, if they are to extract the full potential from every dollar invested, will have to put more emphasis and effort into selling the product—communication in many forms. All of these new services will have sales appeal and we can be sure they will be desired and demanded by the public. All these offerings should be such that Independents may fully participate and yet be equitably compensated.

When we think of private initiative and private capital, we should be very conscious that in our neighboring nation to the north, there is considerable public ownership of communication facilities. In order that our own remain firm and strong on a private

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Report of USITA Accounting Committee

By W. H. TODD, Chairman

YOUR ACCOUNTING Committee respectfully submits the following report of its activity for the past fiscal year. The report contains the thoughts of the committee on various subjects as well as their conclusions and recommendations.

The continued increase in installations of direct distance dialing and the conversion to all number calling have made it necessary to broaden the use of mechanical accounting equipment. The ability to use source information originated by mark sense toll tickets and direct distance dialing tapes affects the majority of operating telephone companies both large and small.

If your company is not originating message information in this manner, I am sure you are involved on the basis of sent collect and received collect cards. Your sub-committee on mechanized toll billing and the use of mark sensing continues to have established the best of communications with a similar committee of the AT&T Co. The full value of the use of mark sensing can be realized only by a complete standardization of the source data. We believe the advance in standardization of the cards in use has improved materially in the past 12 months.

The process of converting to all number calling will require a period of several years, due to complex problems related to printing of directories and traffic and commercial department procedures. I am sure the all number calling program will be more thoroughly discussed in one of the departmental conferences held during this convention.

A new type of telephone service designated as wide area telephone service (WATS) has been announced during the past 12 months. The conditions involved in billing and the proper handling for settlement purposes make this new service a complex problem for the Accounting department.

The Accounting Committee has cooperated with the Washington office of the USITA in rearranging the annual statistical report, whereby the information contained therein will be of greater assistance and more accurately set out comparisons. The various break downs have been set forth in more complete detail.

Your committee received a copy of the order issued by the FCC which states that the commission is not making any provision in its various systems of accounts to accommodate a communications common carrier who is taking advantage of accelerated depreciation for tax purposes.

However, if a company does take advantage of accelerated depreciation, it may apply to the commission for a specific waiver of its accounting rules and regulations, in the event the company feels that this is necessary in regard to its particular records. This has been done from time to time in the case of a few companies.

Your committee was requested by the Advisory Council on Federal Reports for recommendations to protect industry, particularly small business, against an unnecessary burden of government paper work. The questionnaire was completed and returned by the Washington office.

We have been advised that the FCC intends to propose a change in its rules and regulations regarding separate depreciation rates for certain SAGE installations that would be written into Part 31 of the commission's rules. We have not received any determination on this proposed change as of this date.

Your committee was requested to consider the proposed rule change by FCC, under Docket No. 14191, which related to the transfer of certain house service expenses of public pay telephones from Acct. 632 to Acct. 605. It was found that the majority of the telephone companies are currently charging this expense to Acct. 605, as it is actually performed by plant department employes. The committee offered no objection to the proposed change.

Early this year, the USITA Settlement Committee and Bell System representatives agreed upon an interim increase of approximately 10 million dollars as additional commissions to be paid the Independent companies.

The interim increase will be applicable for a period of one year during which time a nationwide study of the cost of "A", "B", line haul and automatic ticketing will be jointly undertaken by the USITA and the Bell System.

The average schedules are then to be adjusted to the results of the study upon its completion. The Settlements Committee has worked long and diligently to make this increase in settlements available to Independent companies. It is mandatory that all Independent companies give full cooperation to this nationwide study. A Subcommittee on Message Toll Settlements—Nationwide Study Task Force has been formed with Mr. Mervin H. Alexander of the Washington office as settlements coordinator. The Accounting Committee is represented on this task force. A number of meetings have been held betwen members of the task force and Bell System representatives. The real work lies ahead, if the ultimate recovery of proper costs is to be realized.

The record of the Independent segment of the telephone industry has been built on the progressive and broad view of management to accept only the best in engineering and new techniques. The Accounting office is required to keep stride, or be one step in front of the parade. The initial installations of the 1400 series in data processing is now in actual use and within months, we will be able, by actual experience, to evaluate this new field. These new developments will require less floor space, fewer personnel to operate the equipment, and greater flexibility in operation. The final goal is lower unit costs and ability to handle more volume.

Marketing Creates Problems for Accounting

By R. PARKER SULLIVAN*

(An Accounting Conference Address)

MARKETING has many meanings to many people, so before we start a discussion of marketing and its relationship to our accounting function, I believe we need to define what we mean when we use this term.

Marketing is a basic business philosophy or, to express it another way, it is an attitude toward the conduct of a business which recognizes that only through complete customer satisfaction can we realize our maximum profit potential. This simply means you can anticipate your profits in relation to the degree of customer satisfaction that you attain. As soon as you accept this definition, it becomes obvious that marketing is not the responsibility of an individual or of a department, but rather it is a basic philosophy that involves all functions of all departments.

The accounting department plays a very essential role in the determination of the degree of satisfaction that the customer receives, and is, therefore, one of the key spots in the company where we need to have understanding, acceptance and participation in effecting the changes necessary to make a transition from a product—or technical-oriented company to a customer-oriented company. I just mentioned the magic word "changes." This leads us directly into our problems.

Should Understand Problems

It may seem strange to be highlighting problems that are associated with the inclusion of an aggressive marketing effort in the operations of a telephone company. It may even appear that I am taking a somewhat negative approach to our discussion of marketing and its effect on accounting. I would like to dispel any such thought promptly and to assure you that my intention is quite the contrary.

My objective is to attempt to identify a significant development in our industry, to acquaint you with some of the problems associated with this development, and through this direct approach to obtain from you a substantial contribution toward the understanding, acceptance and inclusion into your company of sound marketing principles, which is something I sincerely believe we must do to survive and prosper.

There is an old adage which states that discontent is the first step in the progress of a man, or the progress of a nation. I believe all of us will subscribe to this; however, I would like to suggest that your company and mine, as well as you and I as individuals, have enjoyed a degree of progress in relation to our ability to meet and solve our problems. For confirmation of this we have only to look back in the history of the telephone industry where we find an undertaker in Kansas City who had a problem (or at least he thought he had) getting all of his calls from the operator. The result was the invention of the first dial telephone system.

Must Change Philosophy

Today, the telephone industry is in a position to realize a degree of progress equivalent to the introduction of the dial telephone system. To achieve this progress we must recognize the opportunities and the challenges that exist, properly identify the problems, and effectively institute the changes and modifications that are necessary for us to take full advantage of the situation as it is developing. Contrariwise, failure to see the opportunities, to recognize the changing situation and to make adjustments promptly, may prove disastrous.

Businesses that today appear to have the highest possible degree of permanency may find themselves subjected tomorrow to some very fundamental changes. The telephone industry is, in my opinion, experiencing just such changes. We are in a position quite similar to the one the railroads found themselves in, not too many years ago. They enjoyed fierce loyalty in investment circles, only to find themselves in serious financial difficulty a few short years later. One of the best explanations of what brought on this situation is contained in an article entitled "Marketing Myopia" published in the *Harvard Business Review*.

"The railroads did not stop growing because the need for passenger and freight transportation declined. That grew. The railroads are in trouble today not because the need was filled by others (cars, trucks, airplanes, even telephones), but because it was *not* filled by the railroads themselves. They let others take customers away from them because they assumed themselves to be in the railroad business rather than in the transportation business. The reason they defined their industry wrong was because they were railroad-oriented instead of transportation oriented; they were product-oriented instead of customer-oriented."

In Communications Business

There is sufficient similarity here to give us just cause for concern, particularly in view of changes that are taking place right now in our industry. It appears advisable for telephone company management to make the determination now whether they are going to consider themselves in the telephone business or the communications business.

What is the opportunity I refer to? It seems to me that it consists of a much higher degree of sophistication on the part of the American public concerning the value of their communications, and an increasing demand for more and better means of communicating in our business, political, religious and social lives. This is the

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opportunity; now what is the challenge?

The challenge is to recognize some basic changes that are taking place in this communication field; to realize that prior to World War II there were a limited number of organizations that possessed sufficient knowledge; experience and capability to furnish accurate, fast, dependable communications.

Tremendous demands for more and better ways to transmit intelligence and information were created by the war. This transmission had to be not only accurate, fast and dependable, it had to be practically trouble-free. The result was the development of a great deal of know-how on the part of many people and numerous firms to furnish good communications, and to meet the rigid specifications that had been established for such equipment.

Left to right: T. W. Hanley of Dallas, Tex.; Vivian Ryden, TELEPHONY; Francis X. Welch of Washington, D.C.; A. J. Stults and R. C. Reno, both of TELEPHONY.

Complacency is Problem

At the conclusion of the war, these firms with their new-found capability were in a position to introduce communication services that in some instances were broader and superior to the traditional services which we had been offering. We must adjust to meet this challenge.

Let me identify some of the problems associated with this change in attitude on the part of our customers and the influx of new techniques and new sources for the provision of modern communication. It is my opinion that the most serious problem which we have in the telephone business today is over-confidence, complacency or "railroaditus". We have the natural tendency to believe that the fundamental communication system we have so expertly designed and installed will always be in demand. While I believe this is true, I also believe there exists the possibility that we may lose the profitable portion of the communication business and be relegated to furnishing only the least profitable portion. To avoid this we must change our attitude and make the determination that we are in the communication business. We must adopt a policy that will allow us to determine what our customers want and need, then dedicate all of our technical knowledge, experience and capacity to furnish it to him promptly, efficiently and at a fair profit to us. We must be prepared to make the changes and adjustments necessary to meet and beat our competition.

The kind of competition I am referring to is not theoretical, but very real. It is the kind that has the capability to not only deprive you of future revenue potential, but to take from you a sizable portion of your present revenue. This is direct competition for some of the basic services that we offer today. This competition comes from private microwave systems, miscellaneous common carrier, private communications companies, and similar organizations who offer a variety of services.

To help you understand the effect that this competition can have on your company, here is the sales experience of a private communications company with which I am familiar. This company does business in an eastern city and they maintain a sizable sales force to call on various types of businesses and industry for the purpose of selling their "internal communications". An analysis of 16 actual sales calls reveals 15 sales completed. In all 15 instances the number of extension telephones was reduced. Nine of the 15 sales resulted in the reduction in the number of trunks, and in six of the 15 sales the switchboard was removed.

These results point out very graphically the far-reaching effect of this kind of competition. Every one of these sales was made to a satisfied telephone customer. I am confident that it is not necessary to point out the effect of sales of this kind on our present earnings position, but of equal importance is the fact that these customers, from the moment of the sale, are no longer basically customers of the telephone company, but instead they are now looking to someone else to provide their future communication requirements. The customers can be considered lost not only for today, but for some considerable time in the future, and we may possibly never recover their business.

Let me assure you that sales activity of this type is not confined to the big cities. We have experienced it in a number of our exchanges recently, and I am confident that all of us will witness a marked acceleration in this area of competition in the immediate future.

Have Public's Confidence

The American public has complete confidence in the telephone industry to provide communications second to none. It is up to us to maintain that confidence. To do this we must adopt an aggressive attitude toward the development and introduction of new products and new services; we must understand that we are in the communications business; and we must constantly canvass our customer markets to sell them on our capabilities.

We must convince them that we can supply all of their wants and needs as efficiently and reliably as we have furnished them their basic telephone service. We must capitalize on the excellent reputation that we have established and use our experience to convince them that we represent the best qualified source from which to obtain complete, modern communications, tailored to fit their individual requirements. This means we are shifting from defense to offense and, as any sports enthusiast knows, such an effort entails some very basic changes. We should anticipate making such fundamental changes as are necessary in the conduct of our business to enable us to retain our position as the leaders in the communication field. This means a break with some long established practices, habits, procedures and policies. Effecting changes in all these areas constitutes a major problem.

Look To Accounting

All of us have a certain aversion to any change and, certainly, changes of this magnitude in an industry that is as traditionalized in past success as we have been will not be brought about without a great deal of thought, study and effort on the part of many people.

It is in this area of bringing about some of these changes that I believe you folks in the accounting section of our business can make your greatest contribution. I say this because I am of the firm conviction that the accounting function, in the position that it holds in any operating telephone company, constitutes probably the greatest single influence in management's final decision concerning our present and future plans. We look to you as the authorized source for recording, an-

alyzing and reporting our investments, our expenses and our revenue and we, therefore, turn to you for some guidance as to the possible effect that major changes may have on our profit picture.

You have the responsibility to assist your management to recognize some of these basic changes that are taking place in the communication field, and through your experience help them visualize the possible effects they may have on the future of your company. The seriousness of this situation justifies the devotion of your time and effort to prepare for your management some kind of an analysis of the competitive situation that is developing, and to help them see the wisdom in taking a certain amount of calculated risk today in order to insure their future.

Left to right: L. N. Darling, R. W. Ingle and D. B. Hall, all of St. Marys, W. Va.

Obsolescence is Factor

The introduction of any product creates certain specific problems, particularly relating to obsolescence. The introduction of an organized sales effort also creates problems as it inevitably brings about some premature obsolescence. It develops certain inventory problems, necessitates some acceleration in your investment, requires an increase in risk capital, and will temporarily increase some of your installation and maintenance expenses.

All of these problems may constitute a formidable deterrent to your management developing a responsive attitude toward the introduction of the marketing philosophy. I suggest that it is incumbent upon you as management's advisor on the company's financial position to assist them in finding the solution to these problems and to aid in the formulation of a policy that will make it possible to protect their present revenue, and enable them to participate in the profit potential that this expanding communication market holds.

What kind of assistance specifically could you furnish? With knowledge and understanding of the situation that confronts us, you could devise ways of furnishing more and better information, change the manner in which you are reporting some of your operations today, and expand your reports so as to include those that would be particularly pertinent to effectively combat competition, and enable you to more effectively and efficiently serve your customer markets with complete communications.

Breakdown of Customers

As an illustration, wouldn't it be helpful if your management knew what percentage of your total local service rental was generated by business customers and what percentage by residence? Wouldn't it be advantageous if they could quickly determine what portion of the business market contributed what portion of the total business revenue? Historic data concerning the in-place life of some of the key systems, PBX and PABX boards, and the pattern of station development on such systems would, I believe, place them in a position to make whatever changes necessary to realize the highest degree of effectiveness in serving the market with a minimum of risk and expense.

Perhaps it would be helpful to have some analysis concerning the rural customers. What percentage of the so-called rural customers in your company are properly classified as rural and what percentage do they represent of the total? Is there any relationship between the payment lag and the related commercial expense and your performance on the billing schedule. The promptness of your bills, or possibly a less complicated type of bill, might bring better payment results. I am of the opinion that we have a cardinal requirement to develop a new approach to our pricing structure.

There is a good possibility that, as a result of careful study and analysis on your part concerning the manner in which we record and process certain inventories, expenses and revenues you could generate some very helpful suggestions, enabling us to institute improvemements in this total pricing area. These are but a few of the many areas of operations where changes in reporting plus constructive suggestions would materially assist your management. Your experience is invaluable in developing an aggressive approach to profitably serving your market.

It is mandatory in making this transition from a technically-oriented organization to a customer-oriented organization, that the regulatory bodies understand the changing situation and that their aid and assistance be solicited in effecting some of the very fundamental modifications which we must experience.

No group in the telephone industry is held in any higher regard by our regulatory people than you folks in accounting. You carry the principle burden in all of our rate activity, and I believe that a thorough understanding on your part of the importance of effecting a change of attitude with respect to the type of business that we are in, and your recognition of the need to introduce new products and operations, can effectively assist in gaining acceptance from the regulatory bodies of the need for broadening our service offerings, modifying our pricing structures and amending certain approaches to handling obsolescence, depreciation and inventory that would make it possible for us to effect this transition in sufficient time to protect the industry's, and your company's, future.

Left to right: Hugh A. Barnhart of Rochester, Ind.; Mrs. C. C. Pearce of Riceville, Ia.: Thomas R. Warner of Washington, D. C.; Mrs. Barnhart, and Don Anderson of Geneseo, Ill.

Accurate Accounting Required for Regulatory Applications

By PAUL E. WEILAND*

(An Accounting Conference Address)

I CANNOT feel other than a bit presumptuous in coming here before you. I am an engineer by profession. My first ventures into the field of accounting were not a matter of deliberate election on my part, but rather one of those adventures into which one occasionally finds himself injected by the circumstances of fate.

When I became associated with The Public Utilities Commission of Ohio as an engineer, the assumed responsibilities were represented to be the inventory and valuation of the property of public utilities. But the come-on was a bit misleading. It should have read like the ads for the old Uncle Tom shows, "wanted a little Eva who can double in brass." Our commission had no accounting department at that time and the engineers were assigned the accounting studies in addition to the engineering studies. I enrolled in a correspondence course in accounting and I've been doubling in brass ever since.

Cooperation Vital

My studies and experiences in accounting and related studies in engineering gave me a much broader understanding and appreciation of the importance of accurate and adequate accounting in the field of public utility regulation, and a more extensive realization of the interdependence of accountants and engineers in the preparation of exhibits and the submission of testimony before regulatory commissions. For that reason, may I say to you here today that I am not one of those engineers, and their number is all too many, who refer to yours as the ——— ——— accounting department.

For best results in any business organization, and particularly within the organization of a public utility, it is essential that the respective departments have an understanding and appreciation of the importance of the other departments and of the interdependence of all departments for success of the venture as a whole.

When Marcus Aurelius was trying to hold together the old Roman Empire, in an endeavor to impress upon the citizens of Rome a sense of individual responsibility, he related to them Aesop's fable of the hands, the mouth and the stomach. You may have heard this tale as related by the Greek fabulist, some 500 years before the coming of Christ.

Mutual Understanding Needed

The mouth said to the hands, "Why should we provide for this fellow stomach? He eats up all that we give him, and gives us nothing in return." Said the hands, "Let's stop feeding him." So, the hands and the mouth stopped feeding the stomach. This hadn't gone on long when the mouth began to quiver and the hands began to tremble. As time went on these conditions grew worse. Finally the quivering mouth said to the trembling hands, "Maybe, after all, this fellow stomach does do something for us in return for what we do for him." Said the hands, "Let's try feeding him again and see if that helps." The hands and the mouth began again feeding the stomach. Soon the mouth ceased to quiver and the hands no longer trembled.

Such trial by ordeal shouldn't be necessary to create, within any organization, a mutual understanding and appreciation of the contributions of others as a part of the whole endeavor.

With any business organization you, the accountants, are the navigators. Yours is the responsibility to provide for management the answers to these important questions:

Where are we now?
How did we get here?
Where do we go from here?
How?

Essential for Utilities

The maintenance of adequate accounting records is a greater and more important task for public utilities than for other industry. Public utility accounting is, in many respects, markedly different from other industrial or commercial accounting. Its significance for management and for regulation is so substantial as to be unique.

Public utilities are regulated industries. They are regulated as to financing and rates. In many instances, particularly in the case of telephone companies, they are regulated as to availability of markets for service. Their required reports to governmental bodies far exceed those of unregulated industry. For annual reports to regulatory authorities, accuracy is of the essence. Those reports are subject to review and interpretation and any laxity or inaccuracy in such reporting may work to the grievous disadvantage of the reporting company in the tomorrows that lie ahead.

With creeping inflation in the years since the close of World War II and unprecedented demands for additional service, utilities, unlike the Red Queen of Alice in Wonderland, find themselves unable to stay where they are, even by running as fast as they can. Technical progress and improvements in efficiency of operations have provided some, but not sufficient, offset. This is particularly true of telephone companies, inasmuch as they do not experience the decreasing unit costs and increasing returns with an increasing scale of operations that other types of utilities may experience. In such an economic atmosphere, the only course of action is to seek rate relief if the company is to meet its responsibility in the furnishing of service. Accounting for public utilities meets its most severe test as to adequacy and accuracy in a rate proceeding before a regulatory body.

Commission in the Middle

Most consumers are not well versed in public utility economics, and further, they can hardly be expected to applaud the prospect of higher utility bills. For this reason, regulatory commissioners find themselves between

*Mr. Weiland is Director of Utilities of the Ohio Public Utilities Commission.

the Scylla of damned if you do, and the Charybdis of damned if you don't, in a rate application proceeding. They are not endowed with supernatural powers which will permit them to walk on water without rational support. It is encumbent upon the applicant utility to provide that rational support. Most important to provide that support is accurate and adequate accounting and an understandable exposition of what those records disclose and signify. This requires complete and informed cooperation of accountants and engineers.

Every rate case is a problem separate and distinct. This is so because of differences in the laws of the respective states, the interpretation and application thereof by the commissions and courts, and, also, because of the particular characteristics of the individual utilities. Your (USITA) membership consists of large, medium and small telephone companies. The smaller companies have not the means or the need for elaborate accounting systems. I will not undertake to offer recommendations as to form or detail of records, but will confine this discussion to certain information that the records should provide relative to those matters that are usually issues in rate cases.

Rate base is always an issue in a rate proceeding. If the proceeding is before a commission where state statutes provide for a fair value rate base, an estimate of present-day reproduction cost will be submitted as evidence of value. This may be arrived at by a priced inventory, or by trending the survivor dollars from year of installation for the respective plant accounts.

Records Show Unit Costs

Whichever method is used, company records, if adequate, will provide excellent substantiation of unit costs or indices. I say this, despite the fact that company costs are often challenged on the grounds that they are costs for piece-meal construction. Costs of construction in reasonable units will vary little, if any, from costs of construction of the entire property in a single impulse project, and a comparison of costs for larger projects with those for smaller ones, with a weighing of the proportion of large and small projects will provide a good adjustment factor.

More important is that the costs derived from company records reflect full costs. As regards labor costs, time was when a lot of folks believed that heaven would protect the working girl. Nowadays, it requires minimum wage and maximum hours legislation, plus a lot of fringe benefits, workmen's compensation, social security, unemployment compensation, paid holidays, paid vacations, plus retirement and insurance programs. Those fringes are a sizeable proportion of total labor costs and, wherever labor costs are used or compared, all fringe costs should be accurately included and distributed in the cost of labor.

Then there is the matter of overhead costs assignable to construction. In any telephone company, large or small, there is a certain amount of the time of officers, supervisory employees, timekeeping expense, payroll expense, accounting expense, secretarial expense, travel expense, liability insurance, interest and taxes during construction, and other items occasioned by and chargeable to construction.

Left to right: H. R. McNaughton of Muncie, Ind., H. D. Fargo, Jr. of TELEPHONY; Roger Wolin of Northlake, Ill., and R. J. Fegan of Junction City, Kan.

Included With Construction

To record the true cost of plant, these overheads should be included in the cost of construction and credited to operating expenses at the time of construction. Otherwise such charges may be considered as recouped from subscribers by their inclusion in the year's costs of operation.

Where a priced inventory is submitted by the applicant as evidence of current cost to construct the property, the regulatory commission may use a trended valuation as a check on the submitted valuation. Where the applicant has failed to include fringe benefits in its construction costs of labor or has failed to include in construction costs chargeable overheads, the trended valuation cannot be an accurate check on the priced valuation.

Of equal importance in maintaining the integrity of the plant accounts is the treatment of retirements. For individual identificable large units of property, plant records should be so kept as to permit the ascertainment of installed cost with overheads charged thereto. In the case of purchased property, such property should be distributed to the plant acccunts on the basis of a valuation. Where average cost retirement units are used for retirement of property in mass accounts, these retirement units should be revised as frequently as required to give effect to additions of property at current costs and changes in the purchasing power of the dollar.

Separate Study Possible

Where a telephone company has purchased the property of another company whose plant is in such condition that substantial rebuilding is necessary, the use of average retirement units of the purchasing company for retirement of purchased property in the mass accounts may result in substantial overstatement of retirements. In such situations a separate study to arrive at cost of retired plant should be made.

Where evidence as to original cost is to be submitted, the amount of prepa-

Left to right: O. W. Helme, G. L. Lewandowski, both of Sanborn, N. Y.; R. J. Tuttle of Alfred, N. Y.; Billy Ferguson and Ernest Patz, both of Dryden, N. Y.

ration will depend upon the extent to which the applicant's records as to original cost have been reviewed by the regulatory body, either in a prior rate proceeding or in a separate accounting study. If some of the property is purchased property, purchased at arms' length bargaining, there will be the matter of the treatment of acquisition adjustments representing the difference between original cost and cost to the accounting company. If such amounts are being amortized, there is the matter of provision for amortization and return on unamortized balances. If amounts are retained in this account until retired, there is the matter of return on amounts representing plant still in service and provision for depreciation thereof. The treatment of the amounts in the acquisition adjustment account can be quite important in a rate proceeding.

The determination of a reasonable allowance in the rate base for working capital involves consideration of a number of items. These include prepayments, postpayments, average balance on hand from tax accruals, and time lag between rendition of service and payment therefor. While exchange service is usually payable in advance, the same is not true of toll service, coin box service, and excess calls where measured service is furnished. Also to be included is the average of the month balances of materials and supplies chargeable to operation.

Depreciation Accounting

Any discussion of required accounting to meet the test of the rate case would be incomplete without consideration of depreciation accounting. There are no mathematical formulae by which one may ascertain the remaining service life of property in service. It is true that the future is usually both impenetrable and unpredictable, and the only way we may forecast the future with any degree of intelligence, or with any hope of success, is to make our plans by the light of past experience augmented by foreseeable factors of cause and effect.

Assuming that your original estimates of service life are approximately correct, with continuously growing plant, the original estimates will have to be revised from time to time. This is particularly true, for instance, with such classes of plant as central office equipment, where later installations will be subject to retirement along with the original installation. The impact of such foreshortened life will be greater with companies with one or a few central offices than with larger companies with a greater number of central offices. For these reasons, provisions for depreciation must be periodically reviewed and revised to allow for current and prospective factors.

Your accounting records should be so kept as to provide statistical support for such studies and revisions. Statistics, for those who would so use them, can be used to support anything; including statisticians. For those who will use them as an aid in obtaining the right answer, they can be very helpful; in any depreciation studies, they should be the starting point.

Left to right: H. James Boyd of Alexandria, Minn.; D. B. Corman of Glasgow, Ky.; T. D. Talmage of Chicago, and Douglas Gleason of Topeka, Kan.

Starting Point Only

They can be the starting point only. Mortality statistics cannot, by themselves, be the bases for future provision for depreciation. That would be assuming that the factors that determined the service life of retired property would be operative in the same proportions over the life of the property now in service. In these days, when technological developments crowd in on us with electronic rapidity, such a presumption would ignore the realities of today and the potentialities of tomorrow. If adequate provisions for depreciation are to be maintained, we must have a thirst for divining the future and make those adjustments to the experience of yesterday that are necessary to make provision for the potentialities of tomorrow.

The adequacy of depreciation provisions can best be monitored if separate accruals and separate reserves are maintained for each of the respective plant accounts.

May I also suggest that you not wait until the preparation and filing of exhibits for a rate application before reviewing and revising your provisions for depreciation. Some commissions require that proposed revisions in depreciation accruals be submitted in a separate proceeding. Revisions in provisions for depreciation concurrent with rate applications take on the complexion of an expediency to bolster the rate application.

In conclusion, let me emphasize that rates are made for the future. To enable a rate-making body to prescribe rates that will be sufficiently compensatory in the days ahead to enable the applicant to provide service that is adequate and the least expensive in the long run, it is not enough that they have before them only the record of what has gone before. Using the past experience of the company, accurately recorded, your interpretation of the significance thereof, and your knowledge of company planning, you must project a picture of "Where we go from here." It was Henrik Ibsen who observed, "I hold that man in the right who is most closely in league with the future." Even more true today than when Oliver Wendell Holmes said it, "the great thing in this world is not so much where we are, but in what direction we are moving."

Regulation can best serve the interests of the users of service and of the providers of service if you, the utility accountants, will provide it the means.

Left to right: Robert W. Smith of Lincoln, Neb.; Joe Novak of Northlake, Ill.; Richard Rodriguez and Bob Nawman, both of Oakland, Cal.

A Security Analyst Looks at Independent Telephone Stocks

By MARJORIE M. JONES*

(An Accounting Conference Address)

WHAT IS THE objective of security analysts? The answer is quite simple—to make a profit for our clients. We are expected to channel the investor's money into industries and into particular companies within such industries which will result in profits commensurate with the risks assumed. Although the objective is clear-cut, attainment of this aim is not always so easy.

How do we utility analysts proceed to this end? In particular, how do we go about analyzing the Independent telephone company stocks? First, a careful study is made of the past record of your industry. We find that for the last two decades tremendous growth has taken place. The number of telephones in use has tripled. Outlays for plant have been huge. Gross revenues, helped in many cases by rate relief, have shown sharp increases. We discover that the population push into the suburbs has brought not only rapid expansion to many Independent telephone companies but has caused some problems as well. A number of Independents have solved their problems by effecting mergers into large systems. Others have worked them out through sound financing programs and a bold attitude toward obtaining rate relief.

Continued Growth Seen

We use all of this past data as a basis for projecting the future. Based on population trends, increases in the standard of living and the fact that your service now reaches into every aspect of living in this country, it is impossible to foresee anything but continued growth for the industry. Capital expenditures, to expand and to improve existing services, will continue to be very large. Financing requirements will thus be heavy. For various reasons, mergers and consolidations are likely to continue. Larger companies will become stronger.

After determining that the Independent telephone industry has interesting growth prospects, it is necessary to look at the individual companies. We, as analysts, must try to select the companies which, in our opinion, will give above-average performances. We do this by considering many factors. We check the population growth trend for the area served, the economic conditions affecting that territory, regulatory climate, revenue growth, all operating data to give us an indication of efficiency, financing policies, plus many other aspects. However, what single yardstick can we look at which will indicate management's ability to cope with territorial, regulatory, operational and financial problems. The answer is the *trend of per share earnings.* A company may service an area with a population growth trend twice the national average, revenues may be increasing at a rate of 10 per cent annually or better, but if that growth cannot be translated into per share earnings growth, it is of no benefit to the stockholders. If one were to check the market performance of the stock of such a company, he generally would find that, over the years, the stock had appreciated roughly in line with earnings per share and not with revenue growth. The reason for this is that by far the most important factor affecting the market price of a utility stock is earnings per share and the trend thereof. From this, it follows that management's obligation to stockholders is to do everything humanly possible to translate company growth into rising earnings per share.

Three Essential Factors

In trying to ascertain what the trend of earnings per share of a given company will be in the foreseeable future, we take into consideration all the factors I have mentioned before. Special emphasis, however, is placed on the three most important, which are rate of territorial growth, nature of regulation, and management attitudes. The matters of rate of territorial growth and the importance of understanding the nature of applicable regulation need no explanation here. In connection with the latter, however, it should be noted that regulation does not have to become more liberal in order that earnings per share move upward at an adequate pace. The principal requisite is that regulation, in point of rate of return on a stipulated rate base, does not deteriorate.

If the utilities with the sharpest growth rates in per share earnings are examined, it generally will be found that all three fundamental considerations are favorable. If any of the three basic factors is not, then the trend of per share earnings will tend to be something less than in the best in the industry. However, in cases where the rate of service area growth, or sometimes even the nature of regulation, is relatively mediocre, a fairly healthy trend of per share earnings can be developed if the management factor is favorable. Management factor is a very important key to the question.

Attitude Toward Stockholders

In assessing the management of a utility, analysts and investors want to know is it stockholder minded? Is management working first and foremost for its security holders? What problems do they foresee, and how do they intend to cope with them? Do they intend to make a real effort to build per share earnings, or will they follow an easier course? It is our firm belief that a management which strives for a good per share performance will,

*Miss Jones is with White Weld & Co. of New York City.

of necessity, be benefiting the consumer and employe as well.

You might ask how it is possible for management of a regulated telephone company to increase per share earnings substantially. There are two broad areas of management policy and discretion which bear heavily on the trend of per share earnings. The first has to do with rate of return earned on whatever rate base is stipulated by the regulatory body having jurisdiction. The second relates to dividend policy and the means of financing expansion. The matter of earning a full rate of return on an allowable rate base is divisible into two parts—what can be done from within and what must be accomplished through rate relief.

Generally, there is considerable difference between the amount by which a utility could add to a given rate of return through use of each of these methods. A company might be allowed to earn and keep about 6 per cent on its capitalization. By reducing costs and expenses, the return might be pushed to 7 per cent without an objection from the commission. If, however, the company applied for higher rates in order to increase the return to 7 per cent, it might be turned down cold. Management must make every effort to keep expenses and costs as low as possible in order to keep the rate of return up. The various means of doing so in the utility business are well known and do not need to be commented on here.

Rate Relief Problem

The problem of determining when rate relief is needed to correct a sagging rate of return, how much to seek, how to present a rate case, and so on, is one of the most difficult in the utility business. There are many approaches to this problem. Management's objective should be to earn all the end-result dollars that can be earned and kept within the framework of applicable regulation.

There are always a great many factors that influence a management's decision with respect to the timing and preparation of a rate case. Most professional investors understand such factors. Their principal area of concern is management's basic attitude toward the problem of seeking rate relief. Is management trying to find a sound way to proceed with this unpleasant chore, or is it trying to find a reason why it should not proceed?

Management must have the will to obtain necessary rate relief. Prepare your rate case as clearly and thoroughly as possible and put the facts before your commission. If your return is adequate now, but your forecasts indicate trouble ahead, be ready to rectify the condition before earnings decline materially. There should be no fear or hesitancy in seeking rate relief if you are not earning an adequate return and have done all you can to rectify the situation from within. Sometimes it is helpful to educate your commission and your customers to your company's need for rate relief through advertising and other means.

Left to right: J. Ballard Atherton of Honolulu, Hawaii; Mrs. Kay Adair of Dumas, Ark.; E. G. Carlson of Creston, Ia.; H. L. Akers of Manassas, Va.; H. W. Werner and R. E. Trinter, both of Lorain, O.

Dividend Policy Factor

The other basic area that has an important bearing on the trend of earnings per share of a utility—the real measure of growth from the investor's standpoint—pertains to dividend policies and financing. Retained earnings provide a company with funds which, if used profitably, can help to increase profits per share in the future. Retained earnings also provide a base for the issuance of prior capital, e.g., preferred stock, debentures, and bonds. For each $1.00 of retained earnings, roughly $2.00 of prior capital can be issued. If the cost of carrying this prior capital is less than the rate of return earned, the difference will be added to earnings available for the common stock.

A policy of no dividend at all, therefore, would appear to be ideal for a company constantly in need of money. In practice, this generally is not feasible in the utility business because of investor interest in receiving dividends. What percentage should be paid-out as dividends? Some companies pay a rather high percentage of earnings in the form of dividends, thereby deliberately depriving the company of retained earnings. This sometimes is done in the hope that the high payout will cause the stock to sell at a higher multiple of earnings and, therefore, a higher price in relation to book value than would be the case with a low payout. The high premium of stock price over book value helps when it comes to new common stock financing.

Other companies choose to pay out a rather low percentage of earnings in dividends. By retaining a liberal portion of earnings and selling fixed income securities against the retained equity capital, book value per common share, and the amount earned on each share, can be increased. In cases where the dividend a utility pays on its common stock is a highly influential market factor, the low payout tends to hold down the price and thereby the premium of market price over book value. But where the dividend has a relatively small effect on the market price of a given utility stock, a low payout often does not hinder the premium at which the stock sells over book value.

Influence on Market

This raises the question as to when the dividend rate of a utility has an important influence on the market price of its stock and when it has not. Not many years ago the size of the dividend was a major market influence with respect to virtually every utility common stock. Today, however, the market recognizes a few Independent telephone issues as out-and-out growth stocks, useable in portfolios where capital appreciation is the prime objective and income is secondary.

As far as the investor is concerned, the dividend policy that should be followed is the one which will bring about the highest growth trend in earnings and, therefore, the highest price for the stock in question. A policy of retaining earnings that help compound the per share earning power of a company generally is a more attractive one to the investor than a policy of larger dividend payout and expansion financed in part by new issues of common stock. Often the increased per share earnings potential more than compensates the investor for the loss of current dividends, with the result that his over-all position is improved. Cash generated internally from non-cash charges also will aid in the building of earnings because it enables the company to finance expenditures without diluting earnings from the sale of securities.

A real plus factor contributing to earnings growth is when a company

Left to right: A. A. Wilson of Mattoon, Ill.; E. A. McKee Jr. of Lincoln, Neb.; John Whittaker, R. H. Putman, both of Everett, Wash.; Mrs. R. W. Smith and Mr. Smith, of Lincoln, Neb.

has gained the confidence of the financial community and is able to sell common stock at a substantial premium over book value. This recognition is given when a company is able to maintain the return on its common equity at a relatively high level (e.g., 10 per cent) during a period of rapid growth. The market evaluates rising earnings per share at a relatively high multiple. This, in turn, causes the common stock to sell at an especially favorable price with respect to its book value, even though the dividend payout may be low. This enables the company, in the already fortunate position of having good, rising earnings, to take advantage of the benefits of selling common stock, when necessary, at a relatively generous premium over book.

Through this process the trend of per share earnings receives a further stimulus—the book value per share increases, the percentage return on common equity is maintained, and so earnings per share are increased. During the last few years, some of the electric utilities have had this factor working heavily in their favor. These are stocks with rather sharp rates of growth in earnings per share and those which consequently sell at relatively high price-earnings ratios. And they generally achieve their favorable uptrends in share earnings by continuing to earn a full return on their increased investments in property, by plowing a liberal percentage of earnings back into the business, and by maintaining the desired common equity without selling any more new common shares than absolutely necessary. A few of these stocks are currently selling over four times book value. In the Independent telephone industry common stocks of the larger companies are selling around twice their book values.

The capital structure of your company will influence your earnings picture. A sound, well-balanced capitalization will mean financing flexibility and the assurance that you will be able to raise capital under any conditions. Study your particular problems and formulate your plans. Decide what debt/equity ratio would provide the right capital structure for you, and do not fluctuate too far from the ratios you choose. Debt capital is, of course, much cheaper than equity money. Do not become hypnotized by this fact, and throw your capitalization out of balance. Remember, what appears cheap today might force costly financing tomorrow.

In determining the debt ratio, consider the impact on earnings over the next few years. If your earnings are volatile, you should have a lower debt ratio than a company with a more stable earnings trend. In considering the debt segment of your capital structure, it generally is advisable to consider not only first mortgage bonds but also debentures (or unsecured debt).

While a given company might not be willing to have mortgage debt in excess of 50 per cent of its capitalization, that same company might find it prudent to have an over-all debt ratio of 60 per cent which would include 10 per cent in debentures. While debt issues are the favored method of financing growth, due to the tax advantage to the issuer, preferred stock also has a place in the corporate structure and ofers a compromise between debt and common equity.

The obvious advantage of preferred stock is that it provides equity capital without any increase in common shares. It is a generally prudent policy that preferred stock be limited to not more than one-half of the common equity.

Good Earnings Goal

At this point, it might seem that you are on a merry-go-round. You need profits to attract capital, and capital to make profits. It is a slow, difficult process to build investor status. You must set your goal which, in my opinion, should be a good earnings per share trend. Make a careful long-range forecast of your growth potential, revenue trend, construction budget, and especially your financing program. Recognize that to attract capital at reasonable rates you must maintain a fair return on your expanding rate base. You must offer the investor opportunities comparable with those available to him through other, similar, alternative investments. The larger Independent telephone companies are well aware of how the financial community is judging their securities. They appear to be making every effort to gain market recognition.

Some of the smaller companies are at the crossroads. What decision is right for you? Should you merge or consolidate into a larger system? Would an REA loan be the answer to your financing problems? Should you "go public" to seek funds? Whatever your decision, examine every avenue before you make your move. Do not decide on a course of action merely because it looks like an easy way out.

If, for example, you think the answer to your problem is 2 per cent money, make sure that the terms do not impose too stringent restrictions for future financing. Keep your capitalization goals firmly in mind and use the money wisely.

In my opinion, the growth and changes which are taking place in your industry are not being fully recognized by the market. The common stocks of leading Independent telephone companies are selling at an average of 19.5 times recent earnings and have a dividend yield of 3.3 per cent. The average price-earnings ratio for electric utility stocks is 22.1 with a yield of 3½ per cent. The popularly accepted growth electric stocks sell in a range of 28 to 40 times earnings with yield under 2 per cent.

One major reason for this price-earnings differential is the relative lack of knowledge of your industry on the part of analysts. In many cases, we do not seem to have enough contact with your managements. Historical data can be found readily enough but, in some cases, we are virtually in the dark about your present situation, not to mention your future plans.

The analyst must have a pretty good "feel" of each company before he can make a considered judgment regarding its stock. Make an effort to visit some of the financial houses and tell your story to the analysts. Discuss your problems with them. Perhaps they can help you find solutions. Growth is a challenge. Astute management will use it as a tool to move forward. An open door to security analysts may help.

Report of USITA Commercial Committee

By E. H. UTZMAN, Chairman

AT THE BEGINNING of the year, each member of the Commercial committee prepared a memorandum on the various subjects that in his opinion, were worthy of committee consideration. Following this, a meeting of the committee was held, at which all members were present. It was determined at this meeting the items to be taken under consideration for study by the committee for the year 1961.

The committee decided that its prime objective for 1961 should be to review the broad aspects of the commercial program and study in detail many of which are generally considered as minor items, but on which most companies are interested in obtaining helpful information. In addition to this, special emphasis was given to developing a program for the commercial conference that would be highly informative and beneficial to everyone in attendance, as follows:

I. Credit and Collection Policies.
   A. Avoidance of temporary disconnects.
   B. Restoration charges.
   C. Final account studies.
   D. Credit investigation - universal plan.
II. Upgrading
   A. Four-party elimination program.
III. Conversation Timing.
   A. Party lines.
   B. Extended Area Service trunks.
IV. Grade of Service.
   A. Rate differentials.
V. Extended Area Service.
VI. Mechanized TWX (MTWX).
VII. Wide Area Telephone Service (WATS).
VIII. TELPAK.
X. Good public relations.
XI. General tariffs.
XI. GENERAL tariffs.
   A. Rules and regulations.
   B. Tariff simplification.
   C. Package pricing.
XII. Service Area Problems.
   A. Service area maps and their use.

Committee Recommendations

I. CREDIT AND COLLECTION POLICIES. The committee gave considerable time to the problems that are confronting the industry today in carrying on proper credit and collection policies to avoid temporary disconnects due to nonpayment of accounts, which causes the application of restoral charges and, in many cases, results in a final account. It is the committee's opinion that much of this could be eliminated if proper credit investigation was made.

Credit investigation is a major function of any well operated business office. There are many ways that credit investigation can be made, some of which can incur considerable costs, such as telephone calls. Most investigations, however, can be handled through the mails. The committee is giving consideration to a universal credit reporting plan. It is the thinking of the committee that such a credit investigation plan should be one that is recognized and acceptable to all operating telephone companies. No definite plans have been worked out at this date and it is planned that further work will be done on this in 1962.

II. UPGRADING; III. CONVERSATION TIMING. The elimination of four-party service and conversation timing came under review by the committee and it was the consensus that the elimination of four-party service is very practicable in the larger metropolitan area where calling rates, as a rule, are extremely high. It was the thinking of the committee, however, that in small rural communities there would always be a need for four-party service and the industry should give consideration to this fact.

It was noted that some companies have gone so far as to install timing devices for local calls and have given consideration to placing timing devices on Extended Area Service trunks. These timing devices will automatically disconnect the call at the end of a specified time. Use of these timing devices is designed to hold down length of calls and prevent overloading of equipment. The committee does not think that these devices will solve the problem, but rather create service complaints.

IV. GRADE OF SERVICE. Grade of service in relation to rate differentials was reviewed with interest by the committee, in view of the fact that it is felt that much can be accomplished by providing proper differentials in different classes of service. This can be used in many ways. Primarily of concern today is the use of rate differentials between classes of service to create increased demand for one and two-party service.

V. EXTENDED AREA SERVICE. Extended Area Service in many areas, continues to be a major problem in the telephone industry today. It is recognized by the committee that these problems are being overcome in many states where public commissions have issued regulations for providing the service.

The committee reviewed with interest the problems that still exist in many areas where no regulations have been established by commissions and satisfactory settlement policies have not been worked out between companies. Much information can be furnished the operating company confronted with these problems if the operating company will call on the USITA for assistance.

VI. MECHANIZED TWX (MTWX). The Bell company's mechanized TWX program that now has an in-service date of September, 1962 was reviewed by the committee. In view of the Bell's program, many companies which have,

in the past, permitted the Bell company to own and operate TWX service machines in Independent territories are now giving consideration to purchasing the TWX equipment.

Those companies considering this should give careful consideration to the type of machines that would be acquired and whether or not they are suitable for adding conversion kits in order to meet the requirements of the improved service demand. Maintainence might be a problem with some companies. The USITA can be helpful to member companies who might need information on this program.

VII. WIDE AREA TELEPHONE SERVICE (WATS); VIII. TELEPAK. WATS and TELPAK, two new services recently offered by the Bell System, are gaining considerable publicity throughout the country. It was the opinion of the committee that, while these new services are needed, there would not be too much demand outside of large industrial areas, and, as a result, many companies may never have use for these services.

The committee recommends that all operating companies familiarize themselves with these services to the extent that settlements with connecting companies can be determined prior to establishing of service, if possible. The USITA's committee on settlements and new service can be of considerable help to any company desiring any information on these new services.

IX. HOTEL AND MOTEL COMMISSIONS. The committee reviewed with interest Bell's negotiations from time to time with the American Hotel Association regarding the payment of commissions on toll calls originating and terminating over hotel and motel PBX systems. Companies operating on full costs are not affected by Bell company adjustments in these commissions, but many other companies are effected and are immediately called upon by their hotel and motel customers to meet the Bell company's commission allowances. The committee recommends that the Bell company discuss changes in the hotel and motel commissions paid with the USITA's Toll Settlement Committee before agreeing with hotel and motel associations.

X. GOOD PUBLIC RELATIONS.

A. Good Employe Citizens.
   (1) Chamber of Commerce
   (2) Service Clubs
B. Manager interviews with leading citizens and customers for attitudes.
C. Public opinion surveys not highly regarded.
   (1) Service difficulties card surveys.
   (2) Installer cards.
D. Employes most important.
   (1) Must know what is going on to answer public's questions.
   (2) Essential facts cards to employes in connection with rate increases.
E. Purchase of radio time for "party line" program - give public opportunity to use radio time to announce meetings, etc., of public interest.
F. Many companies adding or organizing public relations departments with PR personnel.
G. The committee recommends greater participation for better results.

Left to right: T. A. Calhoun of Dayton, O.; Josephine Poppleton of Tampa, Fla., and J. D. Garrett Jr. of Lewisville, Ark.

XI. GENERAL TARIFFS. Considerable time was spent by the committee in reviewing general tariffs, particularly those covering rules and regulations. It is the thinking of the committee that general tariffs could be simplified, in many respects, to be most helpful to the people administering them and less confusing to the public.

We have particular reference to the pricing out of major items such as PBX systems that involve many different classes of service. The committee is giving consideration to developing a suggested tariff on certain phases of equipment as a suggestion to the industry. We refer to this as "Package Pricing", which would simply mean that one basic price would be quoted instead of listing all of the equipment in detail. Additional work is scheduled to be done on this in 1962.

XII. SERVICE AREA PROBLEMS. The committee noted with interest that service area problems in some localities are on the increase. These problems are primarily brought about by the extension of municipalities into previously recognized rural areas. The committee strongly urges all companies to review their service area boundaries and if adjustments are found to be needed, that they be made at once.

Left to right: D. T. Strickland of Brownwood, Tex.; E. H. Danner of San Angelo, Tex.; P. A. Nenzel of San Francisco, Cal., and C. R. Cashel of Worthington, Minn.

Pricing for Profit

By R. D. Kingston*

(Commercial Conference Address)

DURING OUR USITA commercial committee meeting last April I was asked to discuss the subject of tariffs at this year's annual convention. This is a very broad field and I spent considerable time with various people in the industry discussing problem areas insofar as tariffs are concerned. Almost without exception the discussions would center around the vast number of supplemental items of equipment and service being introduced into the industry and whether or not they were profitable.

Of course, I do not profess to have the answer to this question for any individual company, but I thought it might be of assistance if we were to discuss some of the areas to be considered in pricing these services. By supplemental services, I am referring to all services other than basic exchange service.

Should Not be Subsidized

In discussing this matter of pricing supplemental services, I found that some companies apply their average annual charges to all items of equipment and service. If, as a matter of coincidence, it were true that the actual costs were the same for all services our task would be simple. But what happens to our profit picture if such is not the case. The answer is a simple one—if we are diluting our earnings by underpricing supplemental equipment, these extra services will be subsidized by our basic exchange rates, and I believe we generally agree that it is good business to hold the level of basic exchange rates whenever possible, consistent, of course, with adequate profits and good service. For the next few minutes let us analyze some of the components making up our annual charges and how they may differ for different service offerings.

A relatively few years ago, obsolescence, although applicable to some extent, was not of too great concern to the communication industry. Switchboards were engineered for a life expectancy of 25 years and they would remain in service at least that long and, in many cases, longer. Because of changing customer requirements, a number of recent changes have been made in switchboards and these changes will undoubtedly continue.

The telephone instrument consisted of a base with a handset and a dial all in one color, black. Today, there are many types of instruments in a number of colors, some with lights, some with gongs and some without bells. By our own advertising we urge the housewife to change the color of her telephone instrument when she changes the color of her walls. We are told that, in the not too distant future, the telephone will consist of transmitters and microphones located in the wall in each room of the home. Instruments are now being built for a combination of uses—as an ordinary telephone, as a household intercom, and as a means to answer the front door from any room in the home.

Data Transmission

We are on the verge of a tremendous evolution in data transmission and, although we have provided certain data transmission facilities in the past, there is no question but that there will be radical changes in the facilities provided by telephone companies for this service during the immediate future and for some time to come.

Of course, we could go on for some time discussing probable changes in equipment but we are not concerned here with the number of changes, but rather how to handle them in our pricing structure.

In pricing supplemental services, we might consider applying separate depreciation factors to two different items, reusable equipment and non-recoverable costs. For the purpose of this discussion, we will consider reusable equipment to be that part of the equipment which can be used for a subsequent installation and non-recoverable costs as those costs associated with the actual installation such as labor, overhead, cost of removal and rehabilitation.

For the sake of discussion, let us assume that a company has decided that it will provide data subsets as a part of its regular service offering, and let us assume that these subsets will cost $300 each, and that the engineering department has estimated that it will cost $60 to install each subset. An engineering evaluation shows that the subset should last 15 years. However, we have read in the trade journals and newspapers that the subset will be obsolete in 12 years. On which basis shall we amortize the reusable investment? I think we would be kidding ourselves if we didn't use the 12 years, since that is the estimated length of time we will have to recover our investment.

Now what happens to the $60 it cost us to install the subset. According to our accounting procedures, I understand that it will be capitalized and become a part of investment, at least for the original installation. If we were to assume that the subset will remain in one location during its entire 12-year life, we would simply amortize the installation costs over 12 years, or at a rate of $5.00 per year and be fully compensated.

Must Consider Changes

However, because of changing customer requirements, it is unlikely that each subset will remain in one location for the full 12 years. It is more likely that each subset will be located in two, three, four or possibly more locations during its life. If, for the sake of discussion, the subset is in-

* Mr. Kingston is with General Telephone & Electronics Service Corp. of New York City.

stalled in three different locations during its 12-year life it would follow that the installation costs are actually $180. Therefore, it appears reasonable that we must recover the $60 for each installation during the time it remains in one location or, as in this example, an average of each four years, which would be at the rate of $15 per year.

Of course, this discussion has assumed that installation charges have not been applied. Installation charges would tend to reduce the disparity unless, of course, the charge to the customer equals the installation costs and then there would be no disparity, but it is quite likely that there would be no sale if such were the pricing plan.

The question could logically be asked, "How does one estimate the location life of a new item of equipment?" Unfortunately there is no formula or guide, so far as I know. As we gain experience with related items and through market research, the future may hold more definite answers. In the meantime, estimates based on related items are about our only source.

Left to right: J. S. Cave of New York City; H. A. Barnhart of Rochester, Ind.; Frank G. LaPrade of Martinsville, Va.; Brooks Hays, assistant secretary of state for congressional relations, Washington, D. C.; George A. Best of New York City, and Clyde S. Bailey, USITA executive vice president.

Federal Tax Involved

Often times we use termination contracts to protect our investment against early removal. In those instances where the investment is rather substantial, such procedures may be warranted; however, the cost of processing and maintaining the paper work connected with termination contracts may prove burdensome for minor items. In any case, we should keep in mind that the Internal Revenue Service has ruled that monies collected as termination charges are to be considered as revenue and, as such, are subject to federal income tax. If you do not consider this in the computation, you will be protected for only 48 per cent of the investment, if for example, you pay 52 per cent federal income tax.

Another approach has been to ask for contributions in aid of construction. Once again, such action may be warranted in special cases; however, we must remember that where the contribution offsets the investment, we have no basis on which to earn a profit.

What happens to maintenance costs for these extra services? Conceivably they could be higher, lower, or the same as our average maintenance costs for station equipment. Engineering analysis will be most helpful in these estimates, but other facts should be considered. Let's take the case of an on-premise intercommunicating system which is not connected to the exchange network. After a careful inspection by the engineering department they may decide that the maintenance for the on-premise equipment will approximate that spent on an average item of station equipment. However, if in your annual charges, you express station maintenance as a percentage of investment and if this average percentage includes all phases of station maintenance—the instrument, inside wiring, drop, subscriber loop and central office facilities—we would be overstating maintenance costs on the intercom by using average station maintenance costs, since, in this instance, we would not be concerned with those costs associated with maintaining the drop, subscriber loop and central office facilities. By the same token, there will be instances where the estimated maintenance costs will undoubtedly be higher than average. For example, I believe it is safe to state that the average maintenance is higher for colored instruments than it is for black.

Foreign Attachment Problem

At about this time one may begin to get the idea that these extra services are not worth the time involved. After all, we are in the telephone business, so we will let the customer worry about his "extras." This is undoubtedly the easy way out and we may survive—for a while, not for long, just for a while. Once the door is opened slightly to permit the customer to provide one piece of station equipment, there will be others on the other side of the door trying to push it open even further to provide more and more of his own station equipment and our long-held position of owning all facilities connected to the exchange and toll network, within practical limits, will certainly be in jeopardy.

Our customers will have a great deal of assistance in this push from firms outside the telephone industry who are ready and willing to provide all of the service, short of line facilities, they possibly can. I would hate to think what would happen to our maintenance costs then, if we tried to maintain a satisfactory quality of transmission.

Another problem that should undoubtedly have attention is the inventory required for maintenance, re-

Left to right: Howard Van Zandt of Tokyo, Japan; Mrs. W. F. Miller of Des Moines, Ia., and Mr. Miller.

placement and changes of the various items of supplemental equipment. Not only are we faced with the problem of maintaining replacement parts for older items of equipment, as well as the more recent versions, but the addition of color has greatly added to the inventory in the storeroom. If we base our prices on equipment in service, how do we recover costs associated with those items sitting on the shelf? If, for example, we require one spare piece of equipment for each 10 in service, it is logical that we should increase our investment and certain expenses by 10 per cent in our cost computations to support the inventory required.

Profit Vs. Rate of Return

During the latter part of July, I attended a Utility Management Workshop at Columbia University. One afternoon during a group session the discussion centered around utility earnings or rate of return. I asked the question, "Why don't we call a spade a spade and refer to the subject as profit"? One of the group, who I might add is in a utility other than the telephone industry, was shocked at such a suggestion. He was of the firm belief that the term "profit", insofar as our customers are concerned, is an obscene word. He stated that in group discussions within the industry it may be all right to use the term profit but, insofar as the customer was concerned we should use the term "rate of return" as a sort of camouflage.

Occasionally, I find it rather interesting to analyze words and terms by the various meanings given in the dictionary. For example, the word "rate" could mean velocity or speed and oddly enough, according to the dictionary, the word "return" could mean return. Putting the two together could conceivably mean the speed with which we return and you might add—to the commission for rate relief. The term "rate of return" is also rather vague because of the various ways it can be computed. As you know, some commissions use an historical rate base as the basis for computation, some use reproduction cost new as the basis for computing rate of return, while other commissions use fair value, which, generally speaking, is a combination of both. On the other hand, the term "profit," as defined in the dictionary, is very clear. Simply stated, it is "the pecuniary gain resulting from the employment of capital in any transaction" and, in my opinion, this is what we have in mind.

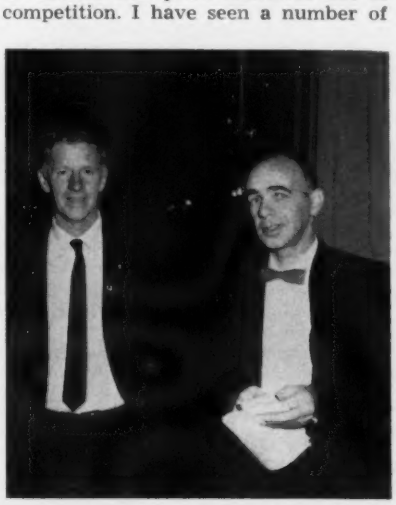
Profit on Supplemental Items?

One of the big questions to be answered is just how much profit should we receive from the supplemental services. In making this decision we must keep in mind competition and salability. Although a company may have an over-all profit objective in mind for its total business, isn't it reasonable to assume that certain piece parts of the business should earn more than the average and others might earn less?

Left to right: P. H. Kaufman of Bellevue, O.; C. C. Pearce of Riceville, Ia.; Phil Rouda of Chicago; P. R. Parsons of Rhinelander, Wis., and Marion Goldenberg of Chicago.

Assume, for example, that a company has decided it needs a certain number of profit dollars to operate successfully, to attract capital, and to provide good service. When you relate these profit dollars to something such as capital invested, or plant in service, the result is 7 per cent. Does this mean that each segment of the business and each item of service should earn approximately 7 per cent? I, for one, don't think so. I believe that if we are to market our products and services successfully, a certain amount of latitude must be given to the profit picture for various items. Why is it wrong to earn 20 per cent on one service and 4 per cent on another, so long as the over-all earnings in these extra services are not subsidized by exchange rates?

I have attempted to mention some of the items to be considered in pricing supplemental services, and you may now begin to wonder if we take all of these items into account, whether or not we will price ourselves out of competition. I have seen a number of cases in the immediate past where a telephone company was underbid by an outside firm, but the business was given to the telephone company. Possibly there are a number of reasons for this, but I believe that the main reason lies in the fact that the customer recognizes the high quality of service and maintenance provided by the telephone company. Another question that may be asked is, "Do we have a big enough investment in these services to warrant the added time required for these computations?" I believe if we were to separate investments, expenses, and revenues associated with supplemental services, the result would be rather startling.



D. S. Guild (left) of Honolulu, Hawaii and J. W. Connor of Winthrop, Me.

I have not attempted to answer many of the questions I have raised this morning, since the majority of them must be answered by you, the management of your company. In addition, some of the items will require understanding and the sanction of your state regulatory body. I believe they are all important in the future of our business if we are to continue our growth as a communication company.

I think the automobile industry is one good example of the promotion of these so called extras. When you buy a car today, I needn't tell you how fast the extras add up. I am not advocating that we follow the hard sell approach of the automobile dealer, since we are well aware of the costs involved in customer dissatisfaction and early removal. However, I think we must agree that the American public is not content with basic essentials. We just naturally require the extras.

History is filled with cases where an industry was content to rest on its laurels and ignore customer demands. Not too many years ago the railroads were the only practical means of transportation to get from one location to another. I needn't tell you of their plight today. I am sure that none of us in this room have any desire to see the telephone industry take the same route, but I am confident that if we do not fulfill the customers' needs, the future of our industry will be threatened.

MARKETING Telephone Services

By BEN SMITH*

(Excerpts from a Commercial Conference Address)

THE "SELL, sell, sell and sell more" obsession in the quest for bigger sales profits can be a road to ruin. . . . Marketing—not just "sell, sell, sell"—is the key to sales profits.

Profitable selling depends on how well you relate "what" you sell to "where," "how," "when," "why," and "to whom" you sell. Putting all these together in your sales plan is marketing. . . .

A profitable telephone sales program is built around three objectives:

(1.) Sell service that people will keep.

(2.) Sell service that does not have high move costs.

(3.) Sell items that have high salvage value.

Sell, Sell, Sell . . . yes. But first study study, study.

Telephone companies have profits waiting for them in residence and farm markets through sales of extension telephones, second main lines, extra listings, telephones for teenagers, and special equipment items like illuminated dial sets. But those profits will keep waiting if you don't spot them and go get them.

First, you have to learn where the opportunities lie. There are many sources for learning this—Census material and surveys of all kinds, in addition to alert everyday observations by sales-minded telephone people on the job. . . .

Less than 1 per cent of the average annual household expense now goes for communications. This alone shows that customers can afford more telephone service.

People are on the move, going into new homes either across the street or across the nation. This means a constant residence market for telephone service and a natural opportunity to contact customers—while you're there is the time to sell them what they need.

Households are getting bigger, too. . . . Department of Commerce figures show that the average household has 2.22 bedrooms and 38.1 per cent of all households have two or more bedrooms. This should be suggestive in telephone sales potential, too. . . .

People buy extension telephones to save steps—to avoid trips up and down stairs, or through the house to get to a ringing phone—as a help during illness—as a general convenience—for added privacy and security—for night and business calls.

Yet a survey of one-telephone homes shows 29 per cent have the telephone in the living room, 23 per cent in the dining room and 15 per cent in the hallway. None of these are locations where people spend a lot of time. . . .

The constant market, size of households and present location of telephones in one-telephone homes, plus knowledge of why people want additional telephones, all show sales potential in the residence market.

Is there a market for two main telephones or more per home? (Mr. Smith made his point dramatically by showing a picture of a boat with two outboard motors. "Do you suppose this boat owner could afford more than one main telephone in his house?" he asked.

One thing—and a very important one—that makes this residence market potential worth working on is that at the same time we provide the customer with better service we are also adding profitable business for the telephone company. The average life of a residence extension in my company is 8¼ years. It takes less inward movement to realize a gain with residence extensions.

Marketing and profitable sales aren't a matter of fancy gimmicks. It is mainly a job done by everyday telephone people alert to customers' needs and wants and taking natural opportunities to merchandise the services we offer. For example:

- Color telephones stimulate extension sales and they have longer location life than black telephones.
- The kitchen is now the preferred location in the home. Bedroom preference has risen and the old favorite living room has dropped in popularity.
- People tend to overestimate, rather than underestimate, the cost of additional phones—so price education of customers is important.
- Homes with more than one telephone still are fertile fields for extension sales. Of these, Southwestern Bell studies show that 89 per cent have only one extension and only 2 per cent have three or more.
- Special equipment items such as illuminated dial and volume control sets can be marketed better than they are today.
- A second straight line is a promising money-maker in the residence market with the crop of teenagers coming on.
- Don't overlook the farm market. Farmers' calls are urgent. They depend more and more on the telephone to run their business—and farming is big business. Today's farmer is acclimated to modern living and his telephone needs and wants are modern. Farmers want service in their farm buildings other than the home. They have shown interest in such things as signaling devices, loudspeakers in the yard, loudspeaker-microphone systems, intercom systems between buildings.

Forget the old "horse and buggy" farm image. The little red schoolhouse has been replaced by ultra-modern school buildings to which the farm youngster may drive in his little red Thunderbird.

Are we selling the residence and farm markets or do we wait for growth to make our gain? Customers want better telephone service. They appreciate suggestions from telephone people on ways to improve their service.

(Continued on page 131)

*Mr. Smith is General Merchandising Manager of Southwestern Bell Telephone Co.

Report of USITA Engineering Committee

By A. A. WILSON, Chairman

THE ENGINEERING Committee, consisting of the main committee and seven sub-committees, has completed another busy year. We feel that the results are most gratifying and are set forth as follows:

MAIN COMMITTEE. Another joint meeting between the Engineering Committee and representatives of the Bell System was held in New York City on June 7 and 8, 1961. The purpose of this meeting was to continue the coordination of engineering matters affecting the Independent industry and the Bell System. Representing the USITA, in addition to the main engineering committee at this meeting, were Thomas R. Warner, Radio Engineer of the Washington office, and representatives of the engineering sub-committees on Direct Distance Dialing, transmission and protection, and All Number Calling. There were about 20 representatives from the AT&T participating at various times during this meeting. The subjects discussed at this meeting were as follows:

TELPAK service.
Air-ground and mobile telephone service.
Wide Area Telephone Service.
Educational television.
MTWX.
PBX in and out dialing.
Data-Phone service and facilities.
Person-to-person DDD calls.
NPA information bureaus.
Blue book revisions.
DDD service improvement.

Notes covering the details of the various items discussed at this meeting are being prepared and will be available to member companies upon request to the Washington office. It is felt that this meeting was very successful and the entire telephone industry benefits greatly from discussions of this kind.

On the day before the joint meeting, the main engineering committee held a committee meeting in New York City on June 6. During this committee meeting plans were formulated concerning the program for the engineering conference in connection with the USITA convention in Chicago. Other business concerning the engineering committee was also transacted during this meeting.

The engineering committee expects to continue to study and keep abreast of specific engineering problems and developments and to keep the Independent industry fully informed on these matters.

SUB-COMMITTEE ON ALL NUMBER CALLING. There has been no activity during the past year in connection with this sub-committee, as the matter of All Number Calling has been in general progressing smoothly with no particular problems to be resolved. It is the feeling that should any problems arise in connection with ANC, they could be handled by the DDD sub-committee or by the various other committees which are directly involved with ANC, such as the traffic committee, the accounting committee, or the commercial committee.

SUB-COMMITTEE ON DIRECT DISTANCE DIALING. The past year has been one of unusual activity for this sub-committee, due to the proposed introduction of new services, such as dial conversion of TWX and Wide Area Telephone Service.

The sub-committee had one meeting with AT&T personnel on Feb. 23 and 24, 1961, dealing primarily with these new services. The director of the Sub-committee also was privileged to attend the meeting of the regular engineering committee with AT&T personnel on June 7 and 8, 1961.

The sub-committee released Preliminary Notes on TWX Mechanization and two supplements thereto; also a memorandum on Wide Area Telephone Service. A memorandum on the future use of 100-words-per-minute teletypewriter machines will be released to USITA members.

A draft copy of the revised Notes on Distance Dialing was submitted to the sub-committee by AT&T late last year. Comments by the members of the sub-committee and by various suppliers were sent to AT&T early this year. Many will be incorporated in the final printing of the new notes.

SUB-COMMITTEE ON ENGINEERING EDUCATION. The need for further training in the field of telephone engineering has long been recognized by the Independent segment of the industry. The annual Telephone Engineering Conference sponsored by this association has done much to fill this need.

Any report summarizing the first five years of the conference would be remiss in not mentioning, at least briefly, the origin of the conference. Credit should be given to a man who felt very strongly about the need for furthering a knowledge of telephone engineering. H. H. Wheeler, a veteran of many years in the telephone business with the Lincoln, (Neb.) Telephone & Telegraph Co., bequeathed in his will a sum of money to be used exclusively for this purpose.

A portion of this inheritance was used by the Sub-committee on Engineering Education to defray the expenses associated with organizing and implementing the first conference in 1957.

That the value of the conference has been recognized is evidenced by the support given it by the telephone industry. In the five years of its existence, a total of 246 telephone people have participated. Eighty-two different companies have been represented. There have been conferees from Hawaii, Bermuda, British Columbia, Chili, Puerto Rico, and Colombia. In 1961, there were 55 students from 29 different companies.

The Bell System has supported the conference by student attendance, by furnishing certain study material, and by supplying guest speakers. Of further value to future conferences, is the advertisement that they have run in TELEPHONY which features the conference and relates to it the degree of

cooperation that exists between the Bell System and Independents.

At each of the five sessions, the General Telephone System has furnished the instructor for the course in Engineering Fundamental Plans.

It is the feeling of this sub-committee that this conference, which places special emphasis on engineering economics and the necessity for developing comprehensive fundamental plans, has proven to be of outstanding value to the industry. We urge the smaller companies to take advantage of the benefits which will accrue as a result of conscientious participation.

During the national convention this subcommittee will meet in Chicago with personnel from Michigan State University to evaluate the 1961 Conference and to make plans for an even better conference in 1962.

Left to right: Ben Smith of St. Louis, Mo.; Foster B. McHenry of Jefferson City, Mo.; Mrs. John H. McHenry of Jefferson City, and John H. McHenry.

SUB-COMMITTEE ON NEW TECHNIQUES AND DEVICES. *Electronic Switching.* The Bell experimental exchange at Morris,, Ill., is from all indications progressing on schedule. This, of course, used tubes primarily and very few transistors. There is little doubt it will eventually be transistorized.

The various Independent manufacturers are making good progress in the development of solid state switching systems. Stromberg-Carlson reports that it will have a 50-line private electronic branch exchange (PEBX) on exhibition at the USITA convention. This system is to be installed at Southern Pines, N. C., for United Utilities, Inc., in November of this year.

Stromberg-Carlson also plans to install a 130-line, 300 terminal CDO for the Dryden Telephone Corp. at Etna, N. Y., in March 1962. It is understood that it has an order for MDO, but that it has not been scheduled as yet.

RCA, Philco, Minneapolis-Honeywell, and various other electronic firms, are also in diversified phases of electronic switching development.

Buried Cable Distribution Systems. Buried cable installations are increasing at a tremendous rate. REA estimates that nearly 35 per cent of the plant installed by its borrowers during 1961 will be underground.

The Illinois Bell Telephone Co. and the Commonwealth Edison Company have for some time now been active in the development and promotion of low-cost buried underground construction (See TELEPHONY, Sept. 16, 23 and 30). The earlier installations were made with each utility occupying a separate trench with buried service being provided to approximately 11,000 homes in a jointly operating area. In October 1959, a joint committee was established to study the feasibility of this type of construction. The first trial installation was made in Arlington Heights, northwest of Chicago. A total of 241 homes were served in this trial. The telephone and power cables were buried in the same trench with the required 12 inches of earth separation between the two services.

Looking toward the future, it is believed that telephone and power cables can be installed at the same depth with random separation in a common trench, even though there will be no separation at some points. Since, however, this arrangement does not conform with present NESC requirements, joint permission may be obtained from local regulatory bodies as provided for in Rule 201A of NESC prior to making an installation of this type.

Great strides have been made during the past year in the provision of in-dialing to large PBX systems. The savings in operating cost and the improvement in service have made this arrangement highly desirable.

SUB-COMMITTEE ON RADIO AND CARRIER. This sub-committee has been active with the valuable assistance of Thomas R. Warner, USITA radio engineer, in connection with Federal Communication Commission matters concerning radio. They will continue to look after the interest of the Independent industry and to keep the member companies advised of the latest developments in this connection.

This sub-committee has also been very busy in connection with the study, revision, and final approval of its proposed "Dial Mobile Public Telephone System Guide." The sub-committee's objective is to produce a source of information on dial mobile radio systems which would be of assistance to both telephone companies and their suppliers in planning for this type of service without specifying technical standards which might limit the future development of dial mobile systems in any way.

This sub-committee met in the USITA offices in Washington on Feb. 14 and 15, 1961, and during this meeting it was agreed that this proposed guide should now be given a final review by the members of the sub-committee, members of the AT&T company and REA representatives for any comment they might have.

The draft of the Dial Mobile Guide was circulated widely within the Bell System and received favorable comment for its intended purpose. Our early AT&T conferees had originally hoped to see a "standard," agreeing between Bell and USITA upon specifics

Left to right: F. D. Learey of Tampa, Fla.; N. S. Hoff of Butler, Pa., and W. E. Bishop of Hood River, Ore.

such as the seizure and disconnect signals, leading to full compatability. However, they ultimately came to our view that there were still too many technical unknowns, within the Bell organizations as well as in the Independent fold, to justify such standardization for some time yet.

REA comments were received so late that we had already referred the "guide" to our parent engineering committee for approval by the time they finally came through. REA's comments appear to lead more to a "standard" than to a "guide;" thus we have allowed our request for engineering committee follow-through approval to remain unimpeded. However, since the REA comments were somewhat involved, there is a possibility of misunderstanding. We hope to reach a clear understanding and come to firm conclusions regarding their comments, at a sub-committee meeting, to which REA has been invited.

The meeting scheduled for September 12 will, in addition to the REA comments above noted, consider the status of air-ground telephone service and discuss solicited ideas of members for future subcommittee studies to be recommended to our parent committee.

SUB-COMMITTEE ON TECHNICAL LIAISON WITH AT&T COMPANY. During the year 1961, several meetings were held with the AT&T primarily in connection with MTWX. Minutes of these meetings have been prepared and are available to member companies upon request to the Washington office. The AT&T representatives have been extremely cooperative in these meetings and we believe much progess has been made. It is anticipated that additional meetings will be held during the remainder of this year and as new services are planned, additional meetings will be necessary during the forthcoming year.

The foregoing is a rather short report, however because of the numerous items covered and the complexity of problems involved, it will be necessary for a person to read the minutes of the various meetings to understand just what has been accomplished and what we hope to accomplish in the future.

SUB-COMMITTEE ON TRANSMISSION AND PROTECTION. This sub-committee, during the past year, has prepared and distribution has been made of the following engineering bulletins dealing with transmission:

Transmission testing procedures for joint (Bell-Independent) circuits.

Management control indices relative to transmission quality.

Exchange area trunk objectives.

Subscriber loop objectives.

Electro-acoustical rating system.

The committee has also prepared an Engineering Bulletin on Transmission Objectives of the Toll Switching Plan, which is now in the process of being cleared for distribution. The bulletins were prepared after conferences with Bell System representatives.

During the year a change in the method of distribution of engineering bulletins originated by this sub-committee was put into use. All bulletins are issued under the "E" section on "Transmission and Protection" and have been indexed for reference. As each bulletin or memorandum is issued, a new index sheet will be distributed with the bulletin as a replacement for the index sheet previously issued. This will enable (USITA) member companies to have available accurate and up-to-date information on all engineering bulletins dealing with transmission and protection that have been issued and are available.

Left to right, W. B. Garnett of Charlottesville, Va.; G. J. Kent of Washington, D. C., and Duane T. Swanson of Lincoln, Neb.

Work has been continuing on encouraging the establishment of state transmission and communication improvement committees. Last year there were 11 states with TCI committees. There are now 19. The states which have organized committees are California, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Nevada, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Texas, Virginia, and West Virginia.

The sub-committee met with Bell representatives in New York on June 9 to review developments and problems in the industry on transmission and protection. As a result of this meeting, minutes have been prepared of the information discussed and as soon as the final review has been completed by the committee and Bell representatives the minutes will be issued in engineering bulletin form as an information memorandum in the "E" section.

During the meeting in June progress was reviewed on the transmission manual being jointly prepared by this sub-committee and Bell representatives for distribution throughout the industry. This manual will be titled "Objectives for Communication Circuits" and will contain sections as follows:

Private lines.
Local loops.
Toll connecting trunks.
Intertoll trunks.
Non-toll trunks.
Inductive coordination.
Protection.
Maintenance.
Results measurements.
Glossary of terms.

It is planned to have a printer's copy of the manual available. Drafts of three sections covering private lines, local loops, and non-toll trunks have already been prepared.

The sub-committee is continuing its efforts to encourage formation of Communications and Improvement Committees in the following 15 states: Alabama, Alaska, Arkansas, Kansas, Louisiana, Maine, Mississippi, Nebraska, New York, North Dakota, Oklahoma, South Dakota, Tennessee, Washington, and Wisconsin.

A number of the state TCI committees have been active in publishing minutes, memoranda, and bulletins for the use of the companies within their states. Among those engaged in this activity are Pennsylvania, Virginia, Iowa, South Carolina, North Carolina, and Illinois.

The sub-committee plans to ask all state committees to cooperate in a program of exchanging this material with other states. In this way each state may select for their own distribution material prepared by other states which will be beneficial and useful to them.

The pilot committee in South Carolina is now working on a plan to obtain information from all companies in the state which will permit an evaluation of progress being made in meeting the transmission objectives. As soon as this plan is working, information on the details will be made available to all other TCI committees.

Remove Cause

"It is much safer to reconcile an enemy than to conquer him; victory may deprive him of his poison, but reconciliation of his will."—FELTHAM.

Mobile and Microwave Field for the Independents

By THOMAS R. WARNER*

(An Engineering Conference Address)

THE MODERN telephone company has progressed far beyond the original concept of a company which furnished only a voice communication service by wire to its subscribers. Technical developments and improvements in radio communication, digital data processing, computer techniques and the transmission of pictures make today's telephone companies complete communications common carriers.

The perfection of radio communication has had a most profound effect upon our operations. It has provided us the means for transmitting the broad bandwidths required for some types of communication, made possible the establishing of large numbers of circuits between exchanges without at the same time requiring elaborate pole line facilities and their maintenance and made the nation's telephone network available to the mobile subscriber.

Created Competition

At the same time, the nature of radio has created competition for our services. Many of our subscribers now have a freedom of choice in the use of our facilities or the development of their own private systems. Radio has, in effect, expanded privately owned in-plant communications facilities into intercity and interstate areas of operation. If we are to continue to grow, and serve our subscribers with the types of communication they desire, we must master and use this most potent new tool in our shop—radio.

The field of radio is vast and time, in conferences such as this, is at a premium. Today I hope to stimulate your thoughts on radio and "accentuate the positive" in its use. I shall discuss briefly the frequencies available to us, what uses we can make of them and how to secure authorizations for their use. Along the way I shall point out how our competitors view the application of radio also.

Frequency Allocation

Radio communication is the electrical transmission of intelligence through space. Because simultaneous transmisssions on the same frequency can interfere with one another over extremely long distances, it has become necessary for all nations to reach international agreement on the broad usage of various parts of the radio spectrum. The International Telecommunication Union, of which the United States is a member, holds periodic conferences to review and adjust these broad allocations. The last such conference was held in Geneva, Switzerland, in 1959. Your association has representation on the technical advisory committees to our State Department in preparing the U. S. position at these conferences.

The allocation and regulation of the use of radio, nationally, is a function of each government; subject, of course, to agreed upon international provisions. In most countries the operational use of radio also remains with the government.

In the United States, allocation and regulation are exercised by our national government. The first allocation of the radio spectrum is made between government and non-government use and users. The portion reserved for use by agencies of our federal government is administered by the President through IRAC (Interdepartmental Radio Advisory Committee). The portion available to eligible non-government users, which also includes state and local government users, is administered by the Federal Communications Commission. Therefore, although your company may not be subject to federal regulation as a common carrier, as a user of radio you become subject to the regulations governing the use of radio established by the FCC.

Three Major Uses

Frequencies are available to telephone companies for three major uses: Customer mobile service, point-to-point service, and company maintenance needs. Mobile telephone facilities can be operated in the 35 Mc band, the 152 Mc band and the 450 Mc band. A Rural Radio Service linking subscribers with central offices can also be established on the 152 Mc and 450 Mc bands, provided it causes no harmful interference to the mobile service.

In the point-to-point radio service, several bands of frequencies in the microwave region are authorized. However, due to the limitations of equipment availability and operational suitability only 3700-4200 Mc, referred to as the 4000 Mc band; 5925-6425 Mc, the 6000 Mc band; and 10,700-11,700 Mc are extensively used today. The 16,000 Mc and 26,000 Mc bands are highly experimental, the 2450 Mc band is primarily allocated for Industrial, Scientific and Medical (ISM) use and 2110-2200 Mc must be shared with Operational Fixed Stations of the private radio services.

Mobile Service

Five years ago, at the 1956 (USITA) Plant Conference, Cy McLean gave a report on "What's New in Radio." Every major item or proposal he mentioned has come to pass—some with a vengeance. In the field of mobile radio he discussed channel splitting in the 150 Mc band, a plan to investigate the use of dial mobile radio telephone service, the need for and progress toward allocation of frequencies for telephone company maintenance use and an exploratory conference between Aeronautical Radio, Inc., and other in-

*Mr. Warner is USITA Radio Engineer.

terested parties to consider a possible air-ground telephone service.

Since that time the FCC has so enlarged the eligibility for licenses in the private radio field that almost every legitimate business enterprise and citizen can own and operate his own mobile radio system. You may well ask what's left for the telephone company to serve? This is a particularly trying question, since most private users operate systems with a much lower quality of service than they would expect to receive from us.

However, my personal observations run in the positive direction. The large volume of licenses for private systems in recent years indicates a real need for mobile communication by large segments of our business population. Based on this premise, it follows that there is a large area which only the telephone companies can adequately serve. First, there is the individual businessman—contractor or salesman. He has no desire to talk only to his office location—in fact his automobile may be his office. He needs a means of talking to prospects, customers, his distributor or wholesaler. He wants true mobile telephone service fully interconnected to the nation's telephone network.

Will Want Universal Service

Second, many of those presently licensed will eventually realize they wanted a communications service and not a radio system being progressively degraded by more and more separate systems operating on the same shared frequency. They will want to communicate with parties outside their systems as well as within, with dependability and freedom from interference. Large privately owned multi-unit mobile systems will probably always be able to justify their operating costs. Still I firmly believe there are a great many potential subscribers now owning their own systems who can be sold on the over-all superiority and economy of a mobile telephone service.

Up to this time the almost universally accepted policy for providing mobile telephone service has been for the telephone company to own and maintain all equipment—base stations and mobile units. While it is true that Part 21 of the FCC Rules and Regulations governing our Domestic Public Land Mobile Radio Service has provisions which permit the ownership of the mobile unit by the subscriber, only a relatively small percentage of the the mobile unit by the subscriber, only vidually owned.

In the proposed public air-ground telephone service this policy is reversed. Most, if not all, of the mobile units will be owned and maintained by the aircraft owner or operator. The telephone companies will own and operate the base stations and provide connection to the nation's telephone plant.

Approach for Land Mobile Service

I believe that we should carefully investigate this approach for our present land mobile telephone service. It would free our companies of the large investment and depreciation factors resulting from mobile ownership. A telephone company could offer mobile telephone service with only the modest investment required for the base station facilities. I realize there will be tariff problems and service problems to be solved in this approach. I also believe that, within a relatively short period of time, many of our companies may be approached for this service by the unhappy owners of small private systems who have the mobile equipment but can't get the service they want and need through a private system.

That many of our companies are meeting the challenge in the mobile field positively is apparent. We have recently tabulated the Independent telephone activity in this field. There are now 101 companies operating 126 base stations and an additional 28 companies with construction permits for stations not yet in service this year. So far in 1961, 12 new Independent companies have been licensed.

The development of dial mobile telephone systems referred to by Mr. McLean is an accomplished fact. Our member manufacturers supplying mobile radio facilities to our industry have this equipment available. Over 50 companies have licenses or construction permits for this mode of operation. The Engineering Sub-committee on Radio and Carrier, under the leadership of Ross Herrick of the Lorain (O.,) Telephone Co., has just published a "Dial Mobile Public Telephone System Guide (Narrow Band)." A copy of this guide is also available.

Maintenance Radio Service

I will deal with the Telephone Maintenance Radio Service very briefly. This service was established on a regular basis by the FCC in September, 1959. It is a division of the Industrial Radio Services under Part 11 of the commission's rules. Its use is restricted to the transmission of communications incident to the technical or engineering aspects of construction, repair, maintenance or efficient operation of communications common carrier rights-

Left to right: A. W. Lambert of San Francisco, Cal.; M. H. Alexander of Washington, D. C., and W. T. Reichel of Killeen, Tex.

Left to right: Vivian Ryden and Lucille Russell of TELEPHONY, and Katharine Bauer of Jefferson City, Mo.

of-way, plant facilities or customer stations, except for immediate emergencies endangering life or property. Frequency assignments are not exclusive but must be shared with other telephone company users. As of today, 93 Independent telephone companies have authorizations in this service. Many others use their domestic public land mobile radio service for this purpose. This is permissible so long as priority of service is given to the regular subscribers.

The public air-ground telephone service is well along the course to a regularly established service. Field tests starting in the Chicago-Detroit area have been extended to New York. The FCC has cleared six frequency channels in the 450 Mc band for this service. Mobile equipment unique to this use has been produced. Plans for a nationwide service have been informally discussed. It seems safe to predict that this will take its place as a new common carrier service in Part 21 of the commission's rules in the near future.

Microwave Service

Progress in the point-to-point microwave field has greatly accelerated in the past five years. It now presents challenging opportunities to the telephone company—and at the same time carries the seed of our fiercest competition. Except for tower and equipment locations the right-of-way is free space. A recent action of the FCC established the Operational Fixed Radio Service on a regular basis and made this right-of-way available, in varying degrees, to most of the recognized private radio services.

During this same period giant strides in the development of electronic business machines and computers have taken place. These machines can "talk" to each other without need for intermediate human translation. In many cases, the distance over which they can talk is limited only by the facilities available to interconnect them. For maximum results they often require broad transmission bandwidths although many can make efficient use of normal voice bandwidths or less.

Picture transmission, or TV, requires broad bandwidths for acceptable picture quality. Frank Barnes will give you a view of one application of this type of communication—Educational TV. The use of closed circuit-TV for in-plant inspection and surveillance purposes may well expand into larger intracity and intercity operations and will most certainly develop many other areas of usefulness. Finally subscription-TV, or "Pay-TV" as it is more popularly called, can become a regular service to the community. The FCC has authorized a test of pay-TV by radio at Hartford, Conn. A pay-TV service by wire and cable has been under test in the suburbs of Toronto, Canada, for some time.

Left to right: D. H. Camp, D. L. Morrell, B. J. Sexton, all of Chicago, and Roy Brooks of Florence, Ky.

Greater Use Facilities Seen

There has also been an increase in our traditional local and long distance telephone service. Although I have no figures, I would hazard a guess that the total requirement for interoffice and toll trunks which are presently a part of your future plans would have been inconceivable five or 10 years ago.

There will be a constantly increasing demand from our subscribers for transmission facilities which will let them take advantage of the latest developments in business control and supervision, automation, accounting, processing—almost anything involving electronic operation and control. If we do not, or cannot, meet their needs the microwave field is also available to them to produce their own facilities.

I am indebted to the Bell System for the following highlights from their survey of the trend in private microwave installations.

An analysis of applications to the FCC between Jan. 1, 1960 and May 1, 1961, indicated that private microwave system miles, planned or in service, increased by 23 per cent—from 35,000 to 43,000 miles. Further investigation brought out that in 10 out of 13 new and 36 out of 47 existing systems the telephone companies lost by default—they did not initially offer a proposal to the customer to take telephone company service. The customer's decision was made and FCC permission for frequencies requested before the telephone company was aware of a private microwave problem.

The period surveyed was a relatively slow one and the only private services involved were power companies, petroleum companies, railroads and local governments. Regular businesses and manufacturers are also eligible but during the period surveyed had not developed firm plans for microwave use. Several have now applied for and many have said they plan to make extensive use of private microwave within the next 10 years.

Left to right: K. L. Lawson of Lincoln, Neb.; Howard Ellis of Haviland, Kan., and Howard Culbertson of Sterling, Kan.

Provides Flexibility

The high degree of flexibility and the expansion capability of a microwave system provide us a positive approach to meeting customer service demands and competing with private systems. For a given quality of signal a private system will have to meet the comparable performance standards of a common carrier system. I believe our first advantage will lie in the capability of *one* of our microwave systems supplying the facilities required for several private systems. This will be true even though the telephone company route between two centers of

population or business activity does not parallel the direct routes likely to be followed by private systems.

The growth of WADS (Wide Area Data Service) and TELPAK, to meet the unregulated competition of private systems will depend upon our skill in achieving the highest degree of efficiency from our entire plant including microwaves.

Another advantage will come from our dedication to the field of communication as a business, our understanding of the field and our organization to build and maintain the service. Other businesses are not likely to build and operate communications systems solely from a proprietary motive. Their primary desire is for dependable communications service meeting their needs. If our planning fails to recognize this, however, the airways are open to their use.

Our companies are picking up this challenge. Since the last report to this group, in 1956, 51 Independent companies now have 6000 Mc systems in service. There are 30 Independent companies with outstanding construction permits for additional systems. Although 27 Independent companies are authorized systems in the 890-940 Mc band they are steadily replacing them with 6000 Mc systems.

Space Communications

In the past year space communication by means of orbiting satellites has stolen the spotlight. Its application to commercial communication service is still in the formative stage. Project ECHO, a metalized-surface balloon-like sphere is still in orbit. It is an example of the passive type of satellite. Radio signals from one ground station are reflected from its surface to a distant ground station. No relay transmitting equipment is associated with the satellite itself.

The active type communications satellite will receive communications from a ground terminal station, store this information temporarily if necessary, and retransmit the information to the appropriate ground stations.

The FCC in its inquiry into the administration and regulatory problems relating to commercial space communications systems, Docket 14024, determined that for economic and technical reasons only one such system would be feasible for some time to come. It also determined that the first usage would be for international communications and would be a supplement to existing facilities for this purpose. An *ad hoc* committee of the nation's international common carriers under the direction of the FCC was established to explore plans and procedures for a commercial communications satellite system as a joint venture. The domestic common carriers were ruled out of this planning committee. This is the status of the active satellite program today.

For those of you who are considering the use of radio I would like to touch upon some of the mechanics of going about the job. Quite likely a marketing study or a service analysis will help you determine approximately what you may need in either the mobile or the microwave fields.

In any case, your first approach to the FCC will be an application for a construction permit for the base station and mobile units of a mobile telephone system or for fixed stations in the point-to-point microwave service. I strongly urge you to secure from the U. S. Government Printing Office Volume VII of the FCC Rules and Regulations containing Part 21—The Domestic Public Radio Services. You must keep a copy in your radio station records file after a station is authorized. Study it carefully before completing the applications for construction permits to be sure you answer all requirements correctly.

In preparing your application answer each item clearly and as fully as necessary to provide the requested answer. Your equipment supplier can be very helpful, particularly in supplying much of the technical information. Remember, however, you are going to sign this as the licensee and you will be responsible for the answers.

30-day Waiting Period

Announcement of the receipt of your application will be made in the weekly common carrier services public notice of the FCC. Under commission procedure no action will be taken for the next 30 days. During this period any party who might object to this grant and who can show that it may adversely affect him can file for a hearing on the application. Following this 30-day period, the commission will process your application and, if all is in order, grant you a construction permit.

Almost all radio operation requires some supporting structure for base and fixed station antennas. If these structures exceed certain minimum heights and/or are located adjacent to recognized airports or airways a clearance for their use must be obtained from the Federal Aviation Authority. Part 626 of the FAA's Rules establishes the criteria for determining whether proposed construction will constitute a hazard to air traffic and the procedures governing the authorization of usable structures.

If it appears that any antenna towers or supporting structures will require FAA clearance you should contact your regional FAA office and submit the required information on form FAA-117. This should be done at the time you are ready to submit your radio application to the FCC. You should also note on the FCC application that clearance has been requested of the FAA. If you determine from the criteria in Part 626 that no clearance is required a note to this effect should be placed on the FCC application.

Do not begin *any* phase of station construction until you receive your CP from the commission. In the past, certain applicants in another service were in difficulty because they began the erection of towers before receiving their authorization from the commission.

Renewal of License

When construction is completed in exact compliance with the terms of the permit you may begin test operation. You should also file, without delay, applications for your station license. If you have found it necessary to make changes after the CP is issued you must file for modification of your construction permit before making the change.

After the station is licensed it is necessary to periodically file for renewal of the license. Set up an accurate tickler file on the expiration dates of construction permits and licenses. File for renewals in sufficient time to maintain continuity of service. In the past year, I have tried to assist telephone companies in straightening out such difficulties as operating on expired construction permits and licenses and operating from the wrong locations when compared to filed geographical coordinates. These are serious violations of the commission's rules. They are also absolutely unnecessary violations if care, forethought and timely supervision are exercised.

This has been a rapid run-through of highlights in the mobile and microwave radio field for Independent telephone companies. Much more could be said. Much remains to be done. Radio has brought us into a truly competitive era of communication service. The imagination, ingenuity and intelligence we bring to the application of radio in meeting our customer's needs will determine our continued progress in this field.

In closing, let me again urge you to secure a copy of the Federal Communications Commission's Rules and Regulations Volume VII which contains Part 21, The Domestic Public Radio Services. Knowledge of the regulations is a must for everyone in our industry considering the use of radio.

Our "Achilles Heel"

Speak with contempt of no man. —Everyone hath a tender sense of reputation.—And every man hath a sting, which he may, if provoked too far, dart out at one time or another.—BURTON.

Discrimination

It is not enough that you form, and even follow the most excellent rules for conducting yourself in the world; you must, also, know when to deviate from them, and where lies the exception.—GREVILLE.

Educational TV and the Independent Company

By FRANK S. BARNES Jr.*

(An Engineering Conference Address)

There is an article in the Sept. 2 issue of the *Saturday Evening Post* entitled "Education Out of the Blue." This article praises in glowing terms the accomplishments and potentials of the educational television instruction being made available in the midwest. It describes the detailed preparation of each lesson and its subsequent presentation, using the very best teaching aids by a highly skilled teacher in front of television cameras.

* Mr. Barnes is Vice President of the Rock Hill (S. C.) Telephone Co.

Instead of being transmitted live at the exact classroom hour desired, however, it is recorded on video tape for subsequent transmission. These tapes are then held and used at the time the lesson is desired. The tapes may also be stored and used repeat-

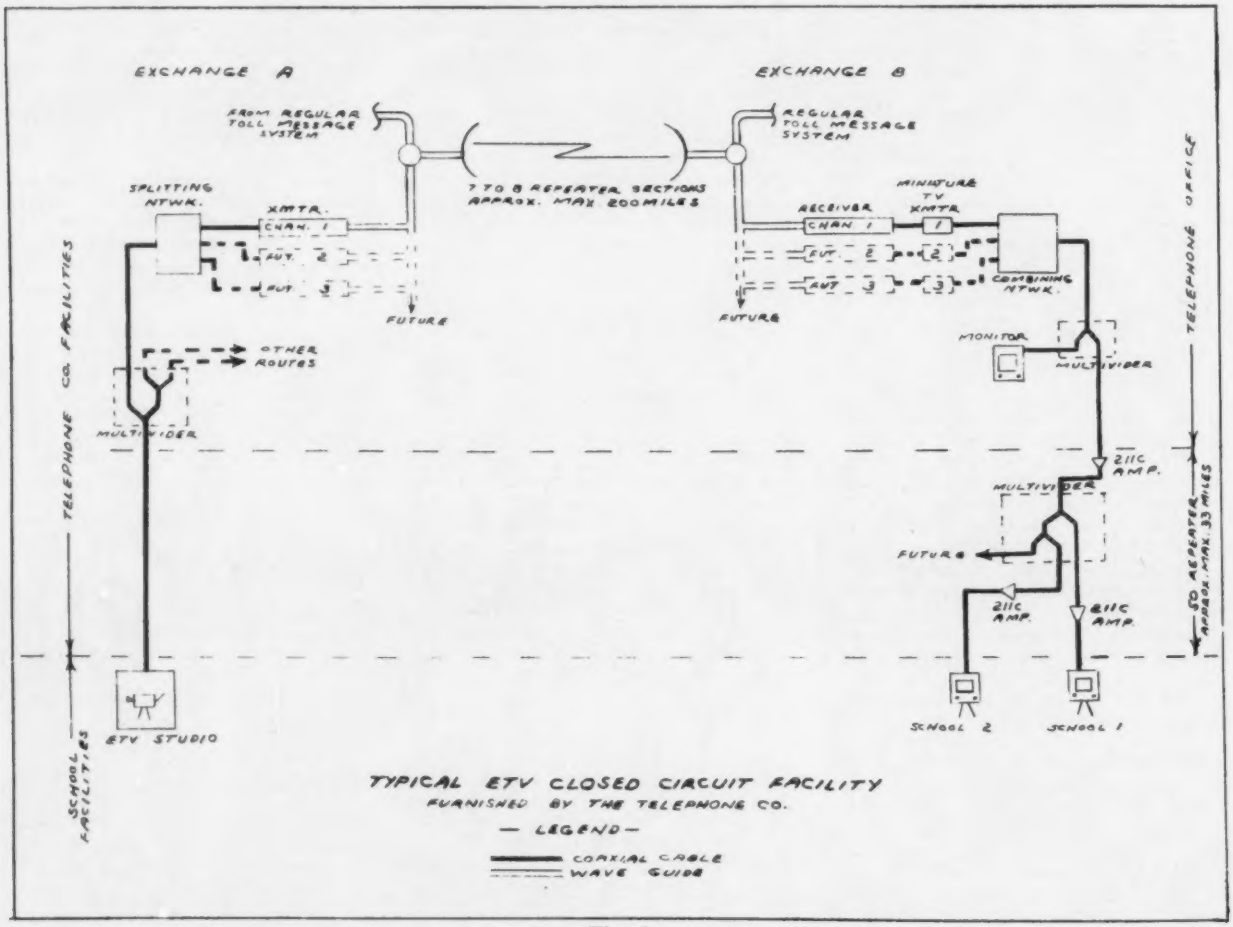


Fig. 1

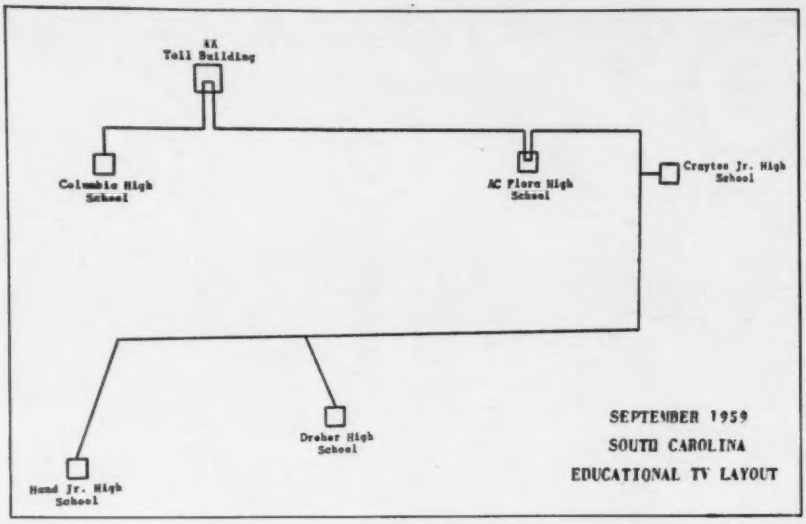


Fig. 2

edly year after year until new developments and techniques make new lessons desirable.

With taped instead of live lessons, it is possible to reach near perfection with planning, rehearsing, checking for content and effectiveness, and taping and retaping until the teacher is entirely satisfied with the results. When the day arrives for transmission of the lesson to the schoolroom, the tapes to be used that day are loaded

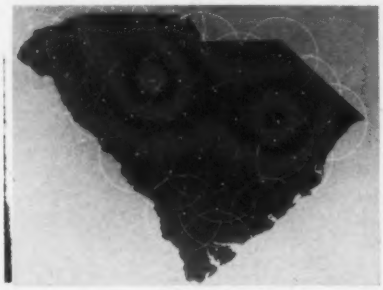


Fig. 3

aboard a four-engine airplane equipped with a television transmitter.

The lessons are then broadcast from an altitude of 23,000 feet while the plane circles in a controlled pattern. The broadcast is in the ultra-high-frequency, (UHF) range which will not interfere with commercial ground stations. The schools participating in the program are equipped with television sets modified to receive the ultra-high frequency.

A lesson for high-school level is usually 30 minutes long and for elementary, 20 minutes. After each TV lesson, the classroom teacher, who is always present and in control of the class, follows up on the TV instruction.

There is no magic to television instruction. Actually, it is no more than another tool in the classroom teacher's kit. In this respect, it is like a textbook or a wall chart or a classroom movie. In no sense will it replace the classroom teacher. It is not claimed to reduce the over-all cost of public education, though some supporters are convinced it has this potential. It is claimed, however, to increase the quality at about the same or slightly higher cost.

You probably are thinking, well, all this is fine, but what does it mean for the telephone industry, and the Independent telephone company, in particular?

Recently an industry group which has been extensively studying the ETV (educational television) experiments pointed out that just as the telephone industry had a key role in helping the growth of commercial television, it is in a position to adapt its experience to the particular needs of educational television, and foster the growth of this essential new public service. This study-group further concludes that in order for the telephone industry to meet the broad requirements for ETV, it is important that Independent telephone companies join in the ETV service offering, whenever a demand for this service exists in their territories.

At the present time, there are 219 ETV systems in operation in this country. In only seven of these are the telephone companies at present furnishing any portion of the facilities.

Now, one of the big jobs in any ETV program is the transmission of the picture and sound from the studio to that TV set in the classroom. There are two approaches to this job. One is referred to as "open circuit" transmission, and the other as "closed circuit".

In the "open circuit" method the ETV signal is *broadcast* from a television transmitter, or transmitters, operating primarily on frequencies in the ultra-high frequency channels (above regular VHF channels 2-13). One of the difficulties of this method of transmission is coverage, since the signal carries only a few miles from the transmitter. In the midwest experiment, this has been overcome by using the airplane. Coverage has increased, but other problems are present, such as operation in bad weather, the limitation on the number of lessons which can be transmitted simultaneously, the difficulty of live telecasting when desirable, the inability to direct a particular program or transmission to selected sets, and the possibility of interference to the picture.

In contrast, the "closed circuit" method avoids these difficulties. The ETV signal is carried from the studio to the television set in the classroom by microwave radio relay, coaxial

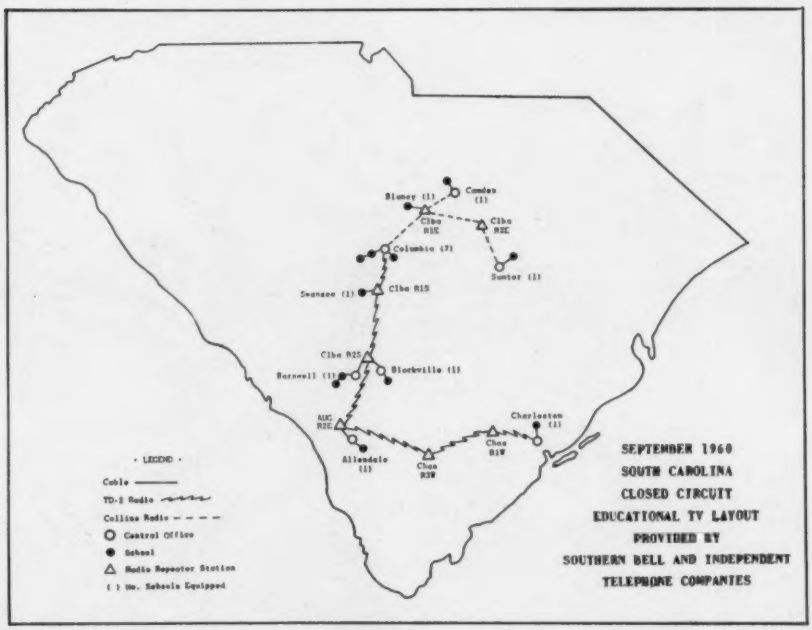


Fig. 4

cable, or a combination of these mediums.

The chart in Figure 1 shows a typical arrangement using telephone company facilities. In this illustration, the ETV signal is picked up at the studio and carried on coaxial cable to the telephone company building. At this point it is put on microwave and transmitted to other communities.

In the receiving community the signal is converted back to VHF frequencies and transmitted over a single-tube coaxial cable to the school. It is delivered to the classroom set at VHF frequencies (channels 2-13) without the use and licensing of a broadcast frequency. Using VHF frequencies permits the use of regular television receivers without the necessity of modification.

Both open and closed circuit ETV are being used and tried. The telephone industry has helped with a number of the closed-circuit networks by providing the transmission channels between the central studio and the schools. The largest of these systems, at present, is the network operated by the ETV Commission in South Carolina. This network is being furnished by the joint efforts of Southern Bell Telephone & Telegraph Co. and the Independents.

ETV in South Carolina had its beginning in the fall of 1958. A study committee of the state legislature in March had recommended that a two-year experiment be undertaken to determine the value of ETV to the public school system of the state. The legislature approved this report and appropriated $65,000 for the first year. A studio was set up in Dreher High School in Columbia, the state capital, and lessons in plane geometry and French were transmitted to classrooms in this school over a closed circuit within the school.

In planning for the second year of the experiment, the results of the first year were discussed with the legislative committee in January, 1959. It was agreed that information was needed from the results in more than one school. A decision was made to investigate the cost of extending this experiment to other high schools in the city.

Southern Bell which operates in Columbia was approached by the supervisory committee for assistance in furnishing the transmission facilities between the studio in Dreher High School and the other high schools. A plan was worked out, using coaxial cable, and the legislature appropriated $100,000 to proceed with the second year of operation, which would add four high schools on a closed circuit network furnished by Southern Bell.

Figure 2 shows the grouping of these schools in relation to the telephone office and the cable layout. During 1959 and '60, first-year algebra was added as a third course to the geometry and French taught the previous year.

Sufficient results were obtained from the experiment in the five high schools in Columbia for recommendation to the legislature that the experiment be extended to a larger area than Columbia, and a structural authority on the state level be set up for direction of the experiment for five years.

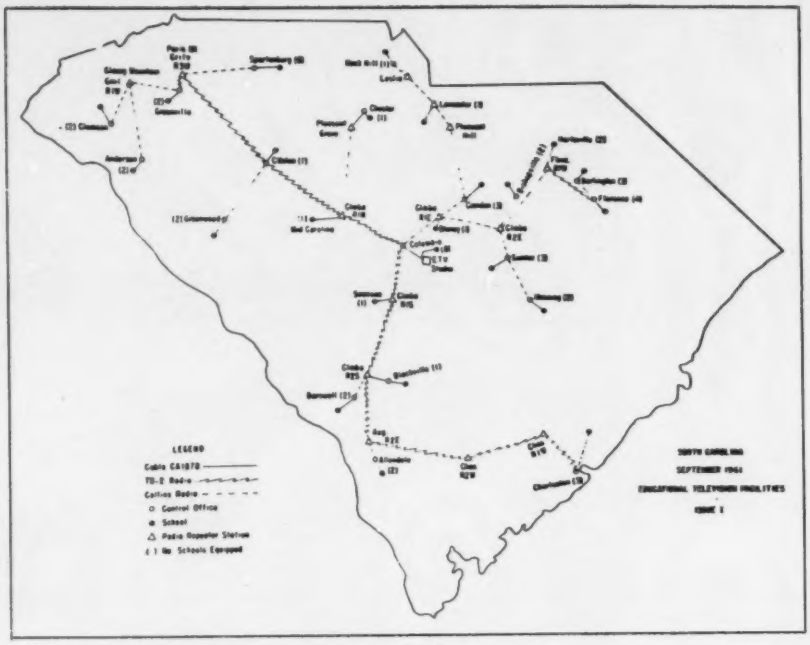


Fig. 5

Those in charge of the program began studying ways in which the experiment could be extended into a larger area. It was determined that if state-wide coverage transmitting complete subject material was to be achieved in South Carolina, the three UHF and one VHF television broadcast channels allocated to the educational use would not be sufficient.

This was further borne out by the fact that coverage of these four stations was only partial over the state area, and multi-channel operation through this medium would be virtually impossible.

In Figure 3, the map prepared by the ETV Commission shows the coverage which would result from 36 broadcast stations strategically located throughout the state. You will note that there are only limited locations

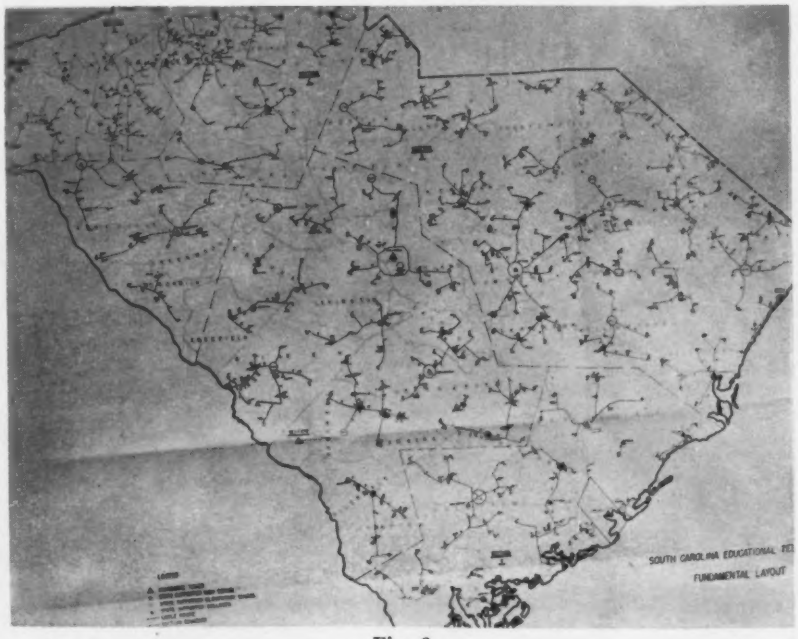


Fig. 6

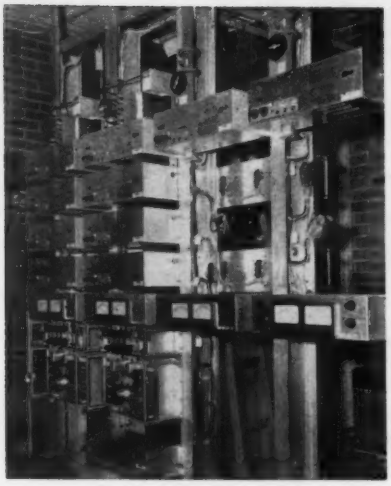


Fig. 7

where three-channel operation would be possible.

These stations would be very costly in investment and operation. In addition to the station cost, there would be the cost of interconnecting facilities to tie all of them together. After carefully considering all of these facts, it appeared that "closed circuit" transmission was the answer, since the flexibility and capacity of such a system is virtually unlimited.

Faced with this information, the group approached Southern Bell about expanding the "closed circuit" system into other cities in the state. Southern Bell was able to work out a plan of providing the interexchange channels by microwave radio relay, using spare channels, protection channels, and installing new channels on their recently developed microwave radio relay message system. The links between the microwave terminals and the schools would be provided by the installation of coaxial cable. This initial network to nine communities in widely separated sections of the state is shown on the map in Figure 4. It included both Bell and Independent areas.

In 1960, the South Carolina legislature authorized the necessary appropriation for this network and in addition, an ETV Commision to direct the program. An order was received on June 30 from the new commission to extend the network to these nine communities.

By extra special effort, the network was placed into service in September, 1960 in time for the start of school. With the inauguration of this service, the South Carolina educational television program became unique in at least two respects. It was the only "closed circuit" state-wide network, and it was the first such network to utilize 100 per cent video-taped operation.

At this point in the development of the network, a representative of the South Carolina Independent Telephone Association began attending the weekly meetings of the industry group with the ETV Commission staff to help coordinate, guide and develop the participation of the Independents. In addition to this representative, the chairman of the transmission and communications improvement committee of the South Carolina Independent Telephone Association met with the group to assist with the technical problems involving the Independents.

As the ETV program reached these other communities, a great deal of support and interest on the part of additional communities developed. Requests poured in to extend the network into these communities. In November of 1960, nine more schools were added, and in January of this year, four more, bringing the total to 26 schools in 15 communities.

The final addition to the network for the school year 1960-61 was made with the connection of the new Cardinal Newman Catholic High School in Columbia on May 1, 1961. This is significant, since part of the ETV Commission policy is to make televised instruction available to private schools, groups or individuals, as well as to the public school system, as long as no additional cost to the commission is involved.

The 1961 legislature, confirming its confidence in the program, appropriated additional funds to provide further extension of the state system for this school year. The extension, as planned in May of this year for Sept. 1 service date, included 56 schools in 25 communities.

These are shown on the map in Figure 5. Since May, the number has been increased to 65 schools in 21 of the 46 counties. This network now extends over 630 miles of microwave and 112 miles of coaxial cable.

At present, three-channel operation is being used within the Columbia network to obtain experience for multichannel operation on the state-wide network. Here again one of the advantages of this "closed circuit" method should be pointed out. It was possible to go to three-channel operation over the coaxial cable network in Columbia without adding additional equipment—the cable repeaters and the cable are a broadband facility

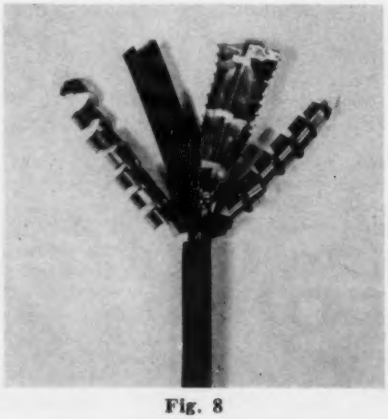


Fig. 8

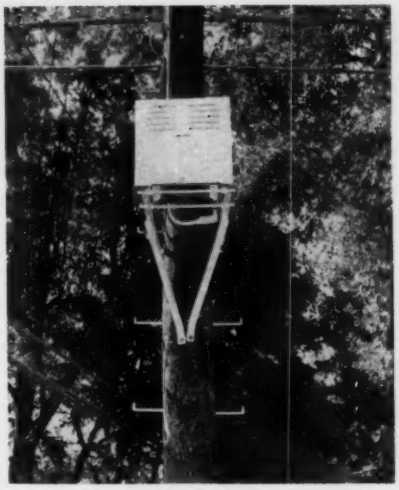


Fig. 9

with sufficient band width easily to carry the three channels and more. "Open circuit", on the other hand, would have required two additional transmitters and frequency assignments from the FCC.

The ultimate aim of the South Carolina Department of Education is to reach all 1,249 elementary and high schools of the state with four channels. In order that the legislature would have the information on the cost of reaching these schools, all telephone companies in the state cooperatively prepared provisional estimates for the four-channel system.

These estimates were completed in record time early this year and found to involve 4,900 miles of microwave channels and 3,779 miles of coaxial distribution cable. The layout on which the estimate was based is shown on the map in Figure 6. It is expected that some changes in the routings may be found desirable, as improvements in equipment designs and fuller use of the network make other arrangements desirable.

An intermediate step in the ultimate plan is to reach all high schools. The cost to the state of reaching the 413 high schools in South Carolina with three channels on regular daily subjects was found to amount to $3,800,000 annually. This cost included the TV teachers, technicians, studio and equipment, receiving sets in the schools and transmission by the telephone companies—everything. It would involve the finest teachers on 36 high school subjects, taken by television to every classroom in the state, at a per-pupil cost of only $12.67 annually.

In January of this year, the network made it possible for students to see addresses by two nationally prominent men to a gathering of legislators, educators, and business leaders of South Carolina. These men were space expert Dr. Wernher von Braun and Dr. Alvin C. Eurich, vice president of the Ford Foundation. Dr. Eurich's commentary on the South Carolina ETV

(Continued on page 132)

Management Aspects of DDD Service

By NORWOOD A. WARNER*

(An Engineering Conference Address)

I WELCOME this opportunity to meet with the USITA and discuss some management aspects of Direct Distance Dialing (DDD) service. Management is sometimes defined as the art of marshalling men, material and ideas to get things done and I am going to stress those aspects of DDD service in my talk today. Incidentally, I propose mostly to talk about the whole telephone industry as a unit. This is because it is only through the joint efforts of Bell and Independents that we can produce the quality of DDD service that our customers need, and this extends all the way from dialing to call completion and billing.

The whole industry is now engaged in extending dialing of distance calls to more places and more kinds of calls at a very rapid rate.

Almost half of the station-to-station calls are dialed now and by 1965 about 95 per cent or better will be dialed.

Today only token amounts of person calls are dialed, but by 1965 10 per cent or more will be dialed, probably rising to 75 per cent or so by 1970. As to coin toll calls, again, only token amounts are now dialed and they will follow about the same course as person calls.

This all means that in the not too distant future, practically all calls will be dialed by the customers. Around two-thirds of these calls will be station-to-station, which will go through without any operator attention. The remaining one-third will receive operator attention at the new call distributing traffic service positions for such services as identification of the called person, acceptance of charges on collect calls, collection of coins, etc.

This changeover from operator service to customer dialing is posing a real service problem to all of us. Operator handling provides built in retrial, by-passing of defective units, and on the spot trouble locating through the continuous human supervision of trunks and equipment. As customer dialing is extended, we lose most of this operator supervision. This means the industry must now direct its attention toward such objectives as:

Completion on first attempt.

Easily understood tones and signals.

Prompt identification and clearing of troubles.

Continuously improving transmission quality.

Acceptance of responsibility by everyone for both outward and inward DDD service.

This must be done in the face of rapidly growing physical plant and the addition of data transmission. Also, let's not overlook that customer expectancy as to service levels is going up each year. Management must thus develop methods to maintain good DDD service both now and when the transition to substantially 100 per cent customer dialing has been completed.

Right now we must work with presently available equipment. At the same time we must do the planning necessary to develop the equipment to meet the requirements of the future. Of particular importance is the necessity of shifting more of our testing arrangements over to "in advance", rather than "in arrears" in order to prevent successive seizures of defective units and consequent call failures. More about this later.

Our studies of the situation lead us to conclude that the industry should build a new maintenance structure for DDD service on the three foundation stones of (1) adequate measurements, (2) a completely organized maintenance job and, (3) up-to-date automatic maintenance equipment. I think I can fairly say that the telephone industry over the years has been strong in all three of these items.

First, as to DDD Measurements, our traditional line observations are being rearranged to include more DDD calls. This is being done by consciously selecting heavy DDD user lines for observation. Further, the results are being summarized to show the service received by the customer in four major categories: Local dial calls, multi-unit calls, simpler DDD calls, and more complex DDD calls.

Beyond this a new form of service observation is being introduced to measure the performance of the various switching systems and by organizational responsibilities. These observations measure DDD call disposition, that is, whether the call was completed OK, whether it was don't answer, busy, no circuit, equipment reaction, etc. These observations are simple to take requiring only 20 to 30 seconds each and can be taken in sufficiently large volume to be indicative of the service given by the various switching systems, by NPA's, and by end offices. This provides the basic material for management to determine who is doing a good job, and a bad job, and where maintenance effort should be exerted. These call disposition observations will be taken mostly at the major switching systems. The results would include Independent company performance as well as Bell. Where Bell takes the observations we would expect to pass along the pertinent results to the Independents and vice versa.

Secondly, as to organization of the maintenance job. We plan the wide-scale use of DDD service bureaus to coordinate and direct the DDD maintenance effort, much as our familiar repair service bureaus direct the subscriber line and station equipment maintenance. To do this, the DDD service bureau would receive information from all available sources, analyze the data and use it to direct the locating of trouble and the maintenance effort generally.

On the input side, they will have available the results of measurements of call disposition, reports from outward traffic operators as to troubles encountered, customer complaints and reports, results of special studies, such as analyses of AMA tapes, etc. In the case of operator handled calls, calls

*Mr. Warner is Assistant Vice President of American Telephone & Telegraph Co.

encountering definite failure conditions such as no ring-no answer, would be held for analysis and possible tracing.

The bureau will determine which calls are to be traced, direct and coordinate the trace, order routining of specific equipment items, order special maintenance observations on trunk groups identified as being in trouble, and generally fully coordinate and direct the maintenance effort.

Where the service bureau is operated by Bell, they will be working with both Bell and Independent company people, and vice versa.

The whole approach will stress the responsibility of each operating unit for outward and inward DDD service of its offices. Suitable extensions beyond its offices to permit the equivalent job to be done on the nationwide network would, of course, be necessary.

All of this is very well, but at this point a bit of philosophy may be helpful. If you will reflect a bit, most of the industry effort in locating trouble is in "arrears." The troubles build up and then the effort is made to detect, locate and fix them.

One very objectionable feature of a defective unit is that it can be seized, released, and reseized many times because the holding time is short. Seizures of 25 to 50 times an hour are common and a really key unit, for example, a first choice intertoll trunk in a large group, can be seized as many as 200 times in a busy hour. Each seizure represents a mutilated call. If the industry is to meet the high standards of service that the public expects and is ready to pay for, the maintenance job must be done the other way around, that is, in advance. This means advance testing to assure that the unit can deliver satisfactory service until the next test. If not, remove it from service and repair it.

This brings me to the third foundation stone, the provision of up-to-date automatic maintenance equipment. The Bell System has some such equipment in use now and is looking forward to:

(1) General provision of automatic test equipment to test the approximately 200,000 intertoll trunks over 25 miles long, and the roughly 400,000 toll connecting trunks, to see that they operate properly, can be talked over, and can be reasonably expected to continue to give good service until the next test. If they do not meet the test, they would be removed from service and repaired. Daily tests of intertoll trunks and weekly tests of toll connecting trunks are the indicated requirement.

(2) General provision of automatic test equipment for some elements of the common control and other vital parts of the toll switching systems that are not now automatically tested, e.g., outpulsing.

(3) General provision of automatic service observing arrangements and standardized call progress tones, so that call disposition can be automatically measured. This will make possible economical coverage in volume including holidays, nights, etc. The standardized tones and signals required for this purpose will also help our customers use the network more intelligently. These arrangements affect all end offices, as well as toll switching systems.

(4) General improvements in signaling and pulsing systems to improve their call completion abilities.

Even with advance testing there still will be failures occurring every day in the plant, e.g., an open winding on a relay. The one place where we can exercise human supervision of the network performance when we reach the all customer dialing condition is on the roughly one-third of the calls requiring operator attention at the traffic service position.

Trouble recording equipment and facilities for holding out of service a trunk not giving satisfactory service are the indicated requirements. These facilities will permit fast trouble locating and will prevent reseizure of a defective unit. Actual tracing of the connection can also be done where appropriate.

One other aspect of our network is the wide range of physical arrangements required to complete calls. Thus, some calls involve short distances and simple switching and transmission arrangements, and others involve long distances and complex switching and transmission arrangements. One way of improving the service on the more complex items is to provide retrial, that is, try to set the call up again if it does not get through the first time. The traffic service position for handling person-to-person and other calls includes arrangements for the operator to make a retrial on those calls. The provision of the standardized tones and signals as to call progress as discussed earlier opens the way for automatically actuated retrial on station-to-station calls. Provision of this feature is now under study. If provided, it would make it possible to markedly narrow the range of performance on call completions.

The provision of adequate numbers of circuits is obviously a prerequisite to good call completion and I can no more than mention it as an objective because of limitations of time. Similarly, good transmission engineering and maintenance is of vital importance. Again, I can only mention this and express the hope that the good work being done will continue.

All of the foregoing adds up to the job that our industry has to do to provide continuing A1 DDD service. And just what is A1 DDD service? In concise form it comes right down to:

(1) Call completion, fast and right, as good as local.

(2) Transmission, clear and quiet, as across a desk.

(3) Billing, 100 per cent correct, nothing less—nothing improves revenues faster than good service!

Summarizing, I want to emphasize that it is the joint responsibility of the entire telephone industry to exercise its management skills to figure out how to do the job, get it organized, and provide the tools. I am confident that, when properly organized and equipped, the craftsmen, the operators, and all the others involved will do a fine job in delivering A1 DDD service.

Of necessity, I have been reflecting Bell System thinking, some of which has already appeared in printed form with more to come as work is completed. The USITA and its members are being kept advised through the usual channels. The USITA staff committee meeting, planned for this Thursday (Oct. 12), will provide a further opportunity to explore how to make our joint efforts most effective.

Left to right: R. A. Pearce, Mrs. R. A. Pearce of Abingdon, Ill., and Mrs. C. C. Pearce of Riceville, Ia.

Report of USITA Plant Committee

By M. S. BODINE, Chairman

THE USITA Plant Committee has had no requests from member companies for assistance during the past year. The chairman and members can account for the lack of requests for assistance on the following bases: (1) Consolidations of smaller companies with larger companies has provided the smaller companies with a source of technical know-how that had not been available to them previously. (2) Many of the smaller companies have become REA borrowers and as a result many of the questions they might have had, have been answered by REA manuals and engineering firms engaged by them.

Your chairman and members of the Plant Committee do wish to call to your attention that they are most willing to assist any member company in any way whatsoever. It is up to you member companies to contact us through the USITA and we will endeavor to give you any assistance that we can.

The Plant Committee met in St. Louis, Mo., on June 20 and outlined the following program for the fall meeting Oct. 10:

(1) Joint Usage of Power Company Pole Agreements
P. M. Ferguson, Jr.
Mankato Citizens Telephone Co.
Mankato, Minn.

(2) C.D.O. Plant Maintenance
James M. Kirby
Oregon Washington Telephone Co.
Hood River, Ore.

(3) Buried Cable Construction and Problems of Maintenance
G. L. Chilberg
American Telephone & Telegraph Co.
New York, N. Y.

(4) Increased On-the-Job Fire Training
M. M. "Smokey" Batzer
Philadelphia, Penn.

We feel that the subjects chosen are those that will hold the most interest of our members and that the speakers are extremely able.

Several problems of the telephone industry were discussed in considerable detail at the meeting in St. Louis. The most important one, I am sure, to the member companies is that of training their personnel to handle the technical phases of plant maintenance that the increasing use of electronic devices is forcing upon us.

In the very near foreseeable future, we will be faced with maintaining all of the present types of equipment and in addition, electronic switching systems, data processing equipment, computers, etc., associated with automatic toll ticketing equipment, as well as other types of mechanical devices. Many of us will be using carrier for the first time. All of this means that we will be forced to organize training programs for our present employes.

Many of us in the smaller category will not be able to set up a training school. It will behoove those of us in this class to look to our larger neighbors for assistance in some of this training. We cannot expect our larger neighbors to assume the financial burden of training our employes but I am sure that they will be glad to assist if we pay our way.

Ray Blain (left), TELEPHONY's technical editorial director, and Francis X. Welch of Washington, D. C.

Manufacturers will, undoubtedly, provide schooling services on their equipment. However, we cannot send our entire force in for schooling at the same time.

These are problems that we should start thinking about and planning for now if we are not to be caught flat-footed at some later date.

We believe that the great majority of the Independent telephone companies are experiencing unprecedented growth. At such times, our plant forces are probably extended to their limit in plant construction and installation. It is during these times that much of our maintenance is deferred.

May we respectfully call to your attention that "deferred maintenance" can be likened to cancer, it will continue to spread if not checked. It might be far better for us to secure the services of one of the many able contractors to do some of our construction work so that our forces can take care of the necessary maintenance.

With the apparent development of a national crisis over the Berlin situation and the increasing importance of communications in national defense, it might be the correct time for us to take a look at the adequacy of our plant. Remember that it will be far easier to "beef up" certain facilities now rather than wait for a national crisis to develop. You will have to be the judge because there is no rule to follow here. This is something that deserves your most diligent consideration.

One last thing: Whatever you do, do it safely.

Joint Use Contracts With Power Companies

By P. M. FERGUSON JR*

(A Plant Conference Address)

IT MAY SURPRISE some of you, as it did me to learn that joint construction of power and communication pole lines began about 1880. I imagine the reason for joint construction in those early days of both types of utilities were much the same as they are today; namely economy of joint construction, public convenience, and necessity, and, in some instances, because there was no alternative.

Note that the initial practice superseded the development of telephone cable which came into being in the 1890's. Joint construction, or joint use, has gradually increased to the point where it is now an accepted and common practice. In fact, the development of suburban residential areas with accompanying landscaping and beautification has in many cases dictated joint construction, because the private home owner loathes two sets of poles whether they are on the street, or an alley, or utility easement.

While joint use construction was originally begun in the 1880's, it was not until 1926 that a guide book, so to speak, was established for this practice. In that year, the Joint General Committee of the National Electric Light Association and the Bell System published a report concerning "Principles and Practices for the Joint Use of Wood Poles by Supply and Communication Companies."

Republished in 1945

This report was republished without change by the Joint General Committee of the Edison Electric Institute and Bell System in 1945. These "Principles and Practices" have formed the basis for negotiating general joint use arrangements between power and telephone companies, both Bell and Independent, for the past 35 years.

My company's contract, negotiated in 1927, was based on this report. With approximately 6,000 Independent companies in the late 1920's scattered all over our country, and without the benefit of a strong USITA as we know it today, there were many Independent companies who either ran the risk of contacting power poles without formal contracts, or avoided joint use construction entirely even though, in some cases, joint construction was more economical. The plant committee of USITA long ago recognized the problems of joint construction and in the late forties, the committee studied the various types of contracts covering the joint use of poles by power and telephone utilities. The committee submitted to the board of directors of USITA, on May 14, 1951, proposed forms of contracts for the following types of joint use:

(1) Between a telephone company and a municipally owned power system.

(2) Between a telephone company and an electric power cooperative.

(3) Between a telephone company and a large privately owned electric power company.

The committee's recommended contracts followed pretty closely the accepted forms in use by the industry at the time and, as stated, were merely guides for Independent companies to study and follow if they so desired.

Change in Technique

While joint construction has been in effect almost 80 years, and the general forms of contracts have been in use some 30 or 40 years, there has been a very pronounced change in the physical aspects of joint construction. I am referring, of course, to the greater use of cable by telephone companies for both urban and rural circuits. Not only is our industry using more and more cable, but with the adoption of plastic and aluminum sheathed cables, which reduces the weight of cable per foot and the use of lashing methods, we are using one messenger to support more than one cable. This has materially reduced the space requirements of telephone circuits on joint use poles.

On the other hand, the greatly expanded use of electricity in urban areas has increased the space requirements of the power utilities and has also increased the height and strength requirement of poles for their use. The greatly expanded use of home appliances (I believe that power utility advertisements state that the average home now has some 40 electric motors in it), home air conditioning, and now home heating, is increasing the kilowatt consumption by leaps and bounds. To adequately take care of this increased demand for electricity, power companies have to either install additional primary circuits or step up the voltage of the primary feeders.

In our city, the power company has now almost standardized on 13,000-volt three-phase Y connected, four-wire primary circuits, and has almost completed the replacement of the former 4,000-volt primary system. This practice is being followed system-wide by this company which is the largest power utility in Minnesota and serves parts of Wisconsin, and North and South Dakota, as well. Undoubtedly, other power companies are doing the same thing.

Primary Voltage Increases

The use of higher voltage primaries by power companies, imposes additional problems for telephone companies. The problem of inductive interference becomes greater with a three-fold increase in primary voltage, so that the shielding of telephone circuits must

*Mr. Ferguson is Vice President and General Manager of Mankato (Minn.) Citizens Telephone Co.

be better. It goes without saying, of course, that clearances between power and communication circuits must be observed much more strictly and greater care must be exercised by telephone construction crews in doing any work on joint use poles.

With the greater voltage the power companies will use larger transformers, larger conductors, and heavier hardware which means a stronger class pole. This, of course, is where the telephone company's pocketbook gets hit, and hit hard. In the case of the smaller telephone company, it can mean a one-way contract where the telephone company contacts the power poles and not vice versa, or not joint use at all and the possibility of public relations problems.

In this problem, it should be mentioned that in most of the new residential areas, because of the need for electricity for power tools by the craftsman during the construction of new homes, the power line construction is needed and completed long before there is a substantial demand or need for telephone circuits. Unless there is a joint use agreement between the two types of utilities which establishes the amount of poles each should set, a telephone company can be on the outside looking in. Once the new home owner takes possession, the problem of setting another set of poles just for telephone service can be a nightmare.

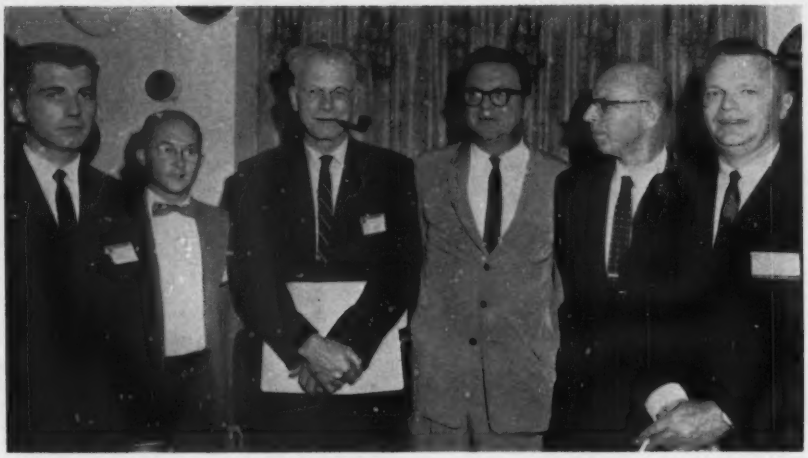
Leads Up To Negotiation

This all leads up to the negotiation of the joint use contract on a fair and equitable basis for both parties. In the early days of joint construction, telephone companies used more open wire construction involving one or several crossarms of wire and maybe a cable attachment. The power company had one crossarm of primary circuits and maybe a secondary rack, or maybe just a primary circuit, or just a secondary circuit. With such construction, the telephone companies did use possibly as much space on joint poles as did the power companies, but the construction practices of both utilities have changed as was pointed out.

Recognizing the fact that the space requirements were quite equal, in the early days joint use contracts were negotiated on a 50-50 basis where the payments by the company renting space were the same for each utility. With the change in space requirements, and no change in our needs for heavier and consequently more expensive poles, the telephone industry for the past decade has felt that the power utilities should bear a proportionately greater share of the cost of joint pole construction.

Several Approaches Listed

Before getting into the arguments, pro and con, for the differential type of joint use contract, let us consider the various contract approaches to negotiating what our industry believes is fair and equitable for both types of utilities. First it should be mentioned that in any form of agreement there is usually defined a "normal" joint pole. A "normal" joint pole is one large enough, and with sufficient height, to carry all the conductors of both companies, provide proper clearance between each company's wires, and provide proper clearance above ground, and over alleys, streets, and highways or railroad tracks. Another item quite often found in these contracts is a definite allocation of so many feet or inches of the pole for each company's use. Now the various forms of joint use agreements are usually patterned on one of the following forms: Joint ownership, permanent rights, flat rental, attachment rental or miscellaneous and no agreement. The basic concepts of each form are outlined as follows:



Left to right: J. J. J. Quinn of New York City; R. A. Wadsworth, Ross Herrick, both of Lorain, O.; George Edland of Chicago; E. C. Peter of Lorain, O., and J. F. Tharp of Springfield, Ill.

Joint Ownership. The Joint Ownership form of agreement is one in which each of the jointly used poles is owned jointly by the power and telephone companies concerned and each company takes title to its proportionate ownership. In general, under such forms of agreement, each company assumes ownership and takes title on the basis of a proportionate ownership of a typical joint pole designated as a "Standard of Reference," or "Normal" joint pole. The size and class of the normal pole are generally specified in the agreement. Where a pole higher or larger than normal is required, the company requiring such larger pole, pays for the additional cost and takes title in proportion to its investment. Such agreements usually cover all of the joint poles in the area common to the power and telephone organizations concerned.

Permanent Right. The Permanent Rights form of agreement is essentially a modification of the Joint Ownership form in which each of the parties retains sole ownership and title to certain of the joint poles and the other party purchases a permanent right of occupancy. Other arrangements are substantially the same as in the Joint Ownership form. The objective of these agreements is that each company should own and have title to about one-half the joint poles on a normal joint pole base.

Flat Rental. The Flat Rental per pole form of agreement is a much used form of the rental arrangement. The basic concept of the Flat Rental per pole agreement is that each party will own about one half of the jointly used poles and that rentals will be approximately one-half the average annual charges on a pole which is stipulated as the normal joint pole. The normal joint pole is usually specified in the agreement. The added cost of poles larger or higher than normal are paid for by the party requiring such pole.

Attachment Rental. This form of agreement usually provides for rental rates for attachments of wires, cables and crossarms in available space on owners' poles. They differ from the attachment permit form to the extent that they cover the area common to the companies concerned whereas the attachment permit form covers only the pole or group of poles specified in each case.

Miscellaneous and No Agreement. This classification includes situations in which joint use has been effected as the result of exchange of letters or of informal understanding. These conditions often occur in smaller towns where there are small municipally operated power plants and the number of joint poles involved is small.

Individual Requirements Vital

Regardless of what form of contract is used, telephone companies today believe, and I think rightly so, that the payments stipulated in these agreements should be based on the requirements of the individual parties concerned and that our industry should

not have to pay a premium for our cooperation.

Some telephone companies have been successful in negotiating contracts based on the average space requirements of each utility on a normal pole. For instance, on a 35-foot pole, 6 feet is allocated for setting in the ground, 18 feet for clearance and this leaves a balance of 11 feet. Of this, the telephone company is allocated 2 foot clearance, and it requires another 4 feet, and the power company is allocated the remaining 5 feet. If we discount the first 24 feet and then divide the clearance space equally between the two utilities, the telephone company uses 4/11 of the usable space and the power company 7/11, or 36 per cent to the power company's 64 per cent.

Although power companies often use the top of the pole for a ground wire or an insulated conductor, they sometimes claim the top one foot is for roofing and is common. Even deducting the additional foot, the percentage is still only 40 per cent for telephone circuits and 60 per cent power. Annual carrying charges on poles vary between 10 to 15 per cent. If the pole cost $40 in place, then the telephone company, on a 10 per cent annual charge, should pay $1.60 rental per year and the power company $2.40 on a 40 to 60 per cent basis. These percentages can also be applied to proportionate ownership of the poles instead of yearly rentals.

Share Savings Plan

Another method of determining rentals on proportionate ownership is called the "Share-the-Savings" plan and is based on the savings of sharing poles against separate poles. Savings are divided in the ratio of the cost of separate poles to the cost of the sum of separate poles. For example, let us assume there will be no joint use on a stretch of line consisting, for simplicity, of 100 poles. The telephone company alone can get by with 25-foot class 5 poles while the power company uses 35-foot class 5 poles:

	Av. cost/ pole	No. of Poles	Total
Telephone company 25-C5	$40	100	$4,000
Power company 35-C5	$40	100	9,000
Total cost to both companies			$13,000

Suppose we use joint construction:

Cost standard 35-C5 $90
No. of Poles 100
Total cost of joint line $9,000
Savings: $13,000 less $9,000 = $4,000

Under a fifty-fifty basis:

Telephone company cost
50 x 90 = $4500
Power company cost
50 x 90 = $4500
Cost (loss) to telephone company
$500
Savings for power company
$4,000

This is inequitable and unfair to the telephone company. In fact, it makes joint construction impractical for the telephone company.

Now to share the savings equally, the telephone company should realize

$$\frac{\$4,000}{2} = \$2,000.$$

This reduces the telephone company's cost: $4500 — $2000 = $2500.

Based on the $90 joint poles, the telephone company then should own:

$$\frac{2500}{90} = 28 \text{ per cent of the poles}$$

Power company owns 72 percent.

The power company will undoubtedly scream and holler at this proportion so suppose we share the savings in proportion to the amount we would have invested in separate lines:

The power company should save $\frac{9,000}{13,000}$ or 69 per cent.

Left to right: Mrs. Robert Kaufman and Mr. Kaufman of Continental, O.; T. P. Roberts of Creston, Ia., and C. C. Bloom of Sycamore, Ill.

A. L. Daughters (left) of Cincinnati, O., and A. B. Walrath of New York City.

And the telephone company should save $\frac{4,000}{13,000} = 31$ per cent.

31 per cent of $4,000 = $1,220

And to save $1,220, the telephone company cost should be $2,780.

The telephone company should then own $\frac{2780}{90} = 31$ per cent of the poles, and the power company should own 69 per cent.

Actually, using the in place figures for our company for 25-foot poles, and we actually have very, very little need for anything heavier than Class 6, the share-the-savings plan would be so extremely in our favor that the power company would need a truck load of crying towels. It actually worked out, in case you're interested, to 14 per cent of the poles for us, and 86 per cent for them.

Share Plan Equitable

Whether your joint use contract is based on a proportionate share of the investment, or a share-the-savings concept, it seems to our company that this is the proper approach to a fair and equitable contract. We are all interested in increasing our revenues and, subsequently, our profits and coincident with this, we are as equally concerned with keeping our expenses to a minimum. The total costs of joint use are no small item. The Bell System, as of 1950, had 9.7 million joint use poles and were experiencing a gain of approximately one-half million poles each year, so their total now should be close to 15 million. Unfortunately, our segment of the industry has no total statistics available so I have no idea as to how many joint poles the Independent companies use. If we assume the proportion to somewhat correspond to the number of telephones in each segment of the industry, there might be 2½ to 3 million joint poles used by Independent

telephone companies. If so, we are not talking about small figures and, unfortunately, the demand and need for joint construction is not going to decrease, nor could we abandon it if we wanted to. Neither can the power industry.

In gathering the information for this report, the telephone companies, by and large, are able to secure differential types of joint use contracts with REA power companies and the majority are municipal power companies. In our state, and I presume that this is a standard REA contract for the entire country, telephone companies pay the REA $1.30 per pole while the REA pays the telephone company $2.00 per pole. This is roughly a 60-40 split and was negotiated because the co-ops recognized the fairness of our reasons for a differential contract. Unfortunately, the private power industry does not hold the same viewpoint, and it is with that segment of the power industry that telephone companies have the hardest time to negotiate joint use contracts which are fair and equitable to the particular telephone companies.

Edward J. Brackey (fourth from left), an executive of Southern Bell Telephone & Telegraph Co., receiving from Thomas E. Drumm Jr., administrator of the Business & Defense Services Administration (BDSA), a flag which was flown over the U. S. Capitol and a certificate of service signed by the Secretary of Commerce. These were presented to Mr. Brackey upon completion of his six-month tour of duty as assistant director for mobilization planning, Communications Industries Division (CID). Left to right are: Mrs. Brackey, E. C. Shaffer and Melba Creelman, both of BDSA; Mr. Brackey, Mr. Drumm, and Alexander J. Falk, director, CID. Upon completing his BDSA assignment, Mr. Brackey became a member of the National Defense Executive Reserve, a group which would staff the operation of an emergency production agency in the event of hostilities involving this country.

Not Revenue Source

Now the basic idea behind joint use construction was not that either utility expected the rentals to be a source of revenue. Instead, the premise was that the costs to each should be equitable, and the benefits from such construction from the standpoint of not only economy but public convenience, as well, would outweigh the construction and maintenance of separate pole lines. In the early days of joint construction when each utility used a more equal share of the poles and when the electric companies did not require as heavy a pole, it was the avowed intent that each should own approximately one-half the joint poles so that payments between the two parties to the contract was practically nil.

Today, any telephone company that tries to match a power company on a 50-50 basis soon finds that its investment in poles is much greater than its own requirements call for. The report of the General Committee of the Edison Institute and the Bell System of 1945 states: "Joint use agreement should preferably be of type under which each of the parties share equitably in the cost of joint poles." Unfortunately for our industry, the Edison Institute, which represents the majority of the private power companies, interprets this to mean that telephone companies pay one-half the construction cost period.

For the past 10 years, our company has assiduously tried to negotiate a differential type of contract with the major private power company of our area. Each attempt has met with the same song and dance, namely, "The matter is being studied by the Edison Institute and when they recommend a different type contract, we will comply but we are not going to set a precedent". Other telephone companies who have met with failure in trying to negotiate more realistic contracts have received the same answer from other power companies. . . .

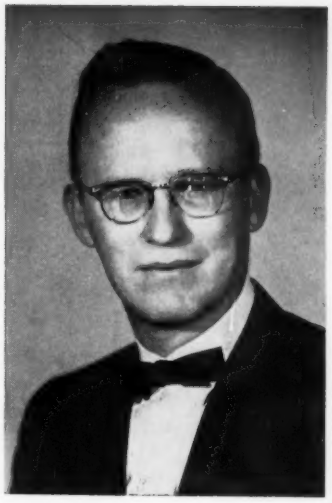
Now, where do we go from here. I should like to recommend that, as Independent telephone companies, we once again close ranks and attack the problem jointly through USITA. As we have joined forces to work out more equitable toll compensation through the USITA Settlements Committee, and as we have joined forces in our national advertising program and in solving problems of nationwide DDD so can we together work out a more satisfactory joint use contract.

Personally, I am convinced this problem will not improve by itself; it is not a nightmare that disappears with the morning light. The power industry is expanding, too, and it is running out of right-of-way for its own transmission lines. Witness its experimentation with extra high voltage lines up to 750,000 volts. These are necessary for the transmission of the huge blocks of power that customers require. Down through power systems, there is an ever-increasing upgrading. Where power companies had one set of primaries on poles, they now need two or a transmission line and primaries plus the secondary circuits. All this means they are going to heavier and taller poles.

Joint construction for our industry can well be absolutely prohibitive or if there is no alternative, extremely costly. By gathering facts and exchanging information on our experiences, we should be able to convince another industry that probably has more at stake from a private enterprise standpoint than we have, that we are not being treated fairly and it's time for a change. There are already some kinks in the power companies' defenses.

Some differential contracts have been negotiated, but mostly between large telephone companies who have the staffs and time to battle it out. Through a committee appointed by USITA, we can pool our statistics and experiences and, armed with this data, such a committee should be able to meet with the Edison Institute and work out a better type of contract. I am convinced that individually we cannot do the job and our only hope is united action. It has been encouraging in preparing this report to find many telephone people share this viewpoint.

CDO Plant Maintenance



By JAMES M. KIRBY*

(A Plant Conference Address)

I BELIEVE the objective in the operation of a CDO plant is the same as that in the operation of any plant; namely to provide the best possible service at the least possible cost to the subscriber and to earn a fair return on the investment. Today, I would like to discuss with you ways of meeting this objective in CDO plant.

For those of you who might not be familiar with the term CDO, I will take a moment to define it. CDO stands for Community Dial Office. The main qualification of a CDO plant is that the traffic operation (the operator) is located in a different town. Usually here is no commercial office, although this is not always the case.

The operation of a CDO is very difficult because it is usually remotely located in relationship to the main office.

As most of my experience has been with small companies, my observations and suggestions are directed towards the small operation. I do believe, however, that in most cases they will apply to the larger company also.

1. PREVENTIVE MAINTENANCE. In order to give the best possible service in the CDO we must practice preventive maintenance inside and out. Although this is not new to some of you, many telephone companies have no planned preventive maintenance program. If you discuss automotive maintenance with these people, 99 per cent will tell you that they are very careful about having their automobiles lubricated, oil changed and tires criss-crossed. If they understand the importance of preventive maintenance of their motor vehicles, they should easily be sold on the value of preventive maintenance of their telephone plant.

Preventive maintenance, which I shall refer to as "PM", means that specific functions are performed periodically. The length of the period will be dependent upon the function to be performed. For instance, monthly we routine the batteries and give them an equalizing charge. On the other hand, annually we lubricate the switches. While on the subject of switching equipment, I believe our manufacturers are somewhat guilty of underselling "PM."

For instance, manufacturers whose equipment does not require lubricating have used this as a sales pitch. On the other hand, those manufacturers whose equipment *does* require periodic lubricating, have a tendency to say as little as possible about "PM" in order to keep their sales up. It is not my intention to criticize them, as I would probably do the same thing. However, you can be assured that all dial systems require some form of "PM" in order to give top grade service.

Over the past 20 years I have personally had the experience of maintaining nearly all makes and types of

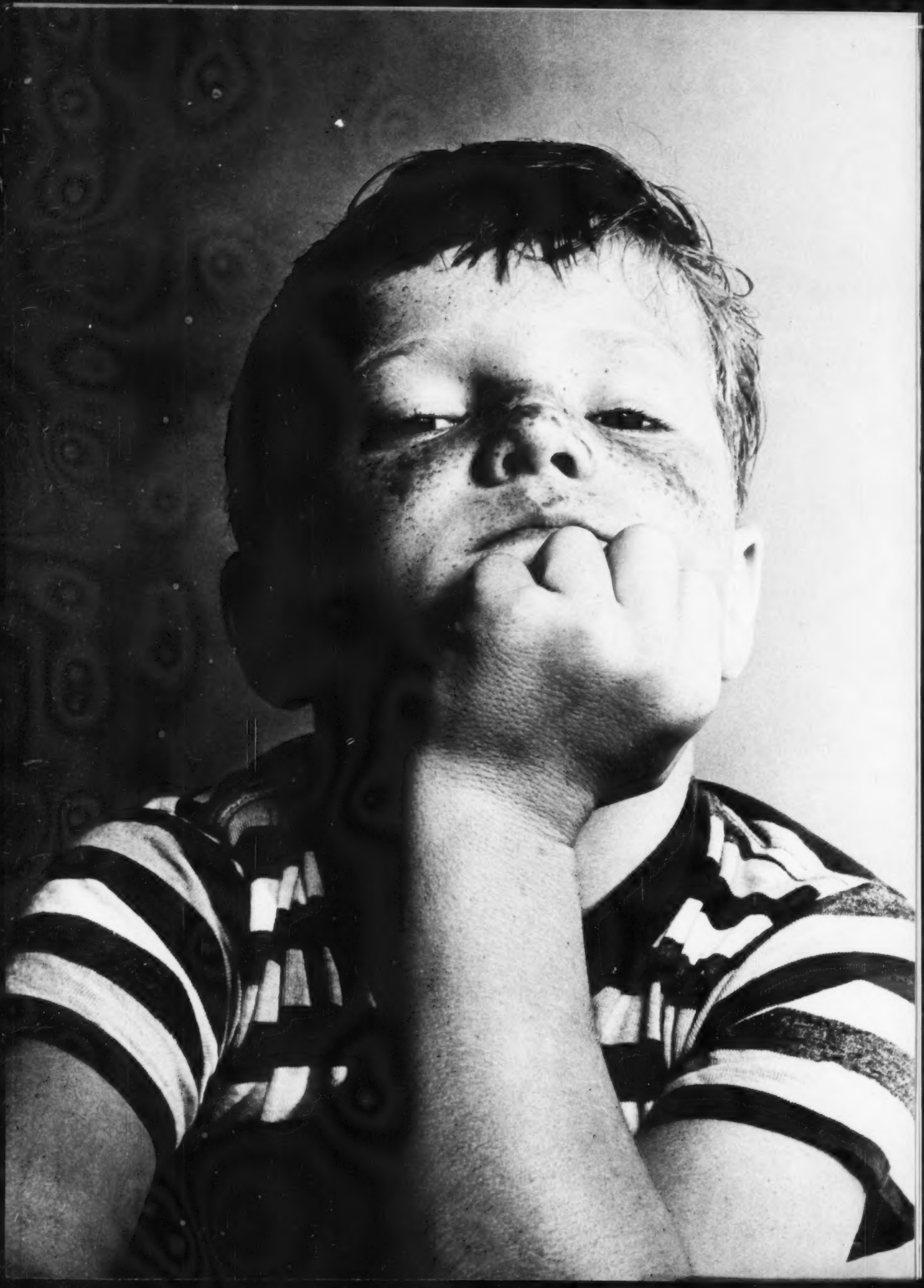
Six Months Routine Check Sheet

Exchange Midtown Starting Date April 1, 1961

Routine	April	May	June	July	August	Sept.
Fill and Routine Battery						
Dust Equipment Covers						
Clean and Wax Floor						
Record Traffic Meters						
Start and Routine Stand-by Electric Plant						
Check Distributing Frame						
Test Finders - Seizure						
Visually inspect wipers						
Test Connectors						
Test Rev. Call Switches						
Test Trunks						
Test Alarms						
Test Tones						
Test Ringing and Tone Transfer						
Test Interrupter						
Test Ringing Machine Output Frequency						
Check Fire Extinguisher						
Lubricate Finders						
Lubricate Connectors						
Lubricate Interrupter						
Lubricate Minor Switches						
Clean Banks						

Fig. 1

* Mr. Kirby is Chief Engineer of Oregon-Washington Telephone Co. of Hood River, Ore.



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- Denver

CONNECTICUT
- Hamden
- West Hartford

DELAWARE
- Wilmington

DISTRICT OF COLUMBIA
- Washington

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- Omaha

NEW HAMPSHIRE
- Manchester

NEW JERSEY
- Newark
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switching gear—steppers, crossbar and relay. I can tell you that every type has its maintenance problems. These should be checked periodically to make sure that they will not cause a future breakdown.

The first step towards getting a "PM" program going is to set up some sort of a check list. Here you outline what work is to be performed at the end of each period. For those of you who are interested, I have attached a very simple check list *(Fig. 1)*. This covers six monthly periods. The type of check list which you use is not important—the important thing is to have a definite program outlined and to faithfully follow it.

II. ROUTINE MAINTENANCE OF CENTRAL OFFICE EQUIPMENT. Now that we have discussed the need for Preventive Maintenance, let us discuss a few of the items which we will want to put in our dial equipment routine check list.

I believe that one of the most important items is that of keeping the office neat and clean. I have frequently told young technicians that realizing the importance of keeping the office clean, and doing so, is just as important as having a good technical knowledge. I firmly believe that this is true, regardless of the make or type of dial equipment. Therefore, the first item on our check list, in big red letters, is: SEE THAT THE BUILDING AND EQUIPMENT ARE FREE FROM DUST AND DIRT. The method used in getting the dust out of the equipment is dependent upon the type of dial unit.

Other items which I feel we frequently overlook are: Read all traffic meters; check fire extinguishers; start and check the stand-by light plant according to the manufacturer's recommendations; check all wiring and soldering, especially the distributing frame; check the ringing interrupter and tone equipment; routining of the dial equipment itself is dependent upon the type of dial unit used.

Most manufacturers have manuals dealing with maintenance and routining of their equipment. Their instructions should be closely followed.

Many of us now have Direct Distance Dialing. DDD demands that we be more precise in the adjustment of our dial equipment. To help with this, I strongly urge the use of the following test instruments: The current flow test set, for the adjusment of relays; the pulse generator and measuring set; the brush high speed pen recorder.

Although the use of these instruments is beyond the scope of this paper, I would like to take a few moments to discuss the use of the pen recorder. Most of you are familiar with some type of pen recorder. The most common ones are used as recording voltmeters and barometers. The one which I am discussing is a high speed two-channel (two-pen) recorder. Each pen measures the pulses, cycles or changes in a circuit. At the main dial office, it is very useful in the analysis of the pulses and inter-digital timing of the register-senders. In the C.D.O., which is usually a non-recording DDD office, it is useful in the analysis of the out pulsing of the line identifier.

If you are now using the pen recorder or plan to use it in the future, I have a suggestion which will save you time and money. The tape furnished is a very expensive charted type tape. We have found that the instrument works just as well with adding machine tape. The only problem is the measurement of time on the tape. By connecting the second pen of the recorder to 60-cycle, 110-volt ac supply, we use the 60 cycles per second as a time reference.

III. AUTOMATIC LINE ROUTINER. An item which goes well with a CDO dial equipment routine is the automatic line routiner. This unit can be purchased from most manufacturers for a cost of approximately $1,500. It is usually installed in the main office, but can be set to routine the lines in the CDO offices also. It tests for loop leaks, leaks to ground and foreign battery, and prints this information on an adding machine type tape.

In my company, we are planning to build our own *portable* line routiner, To my knowledge, no such instrument which will meet our specifications is available on the market. Our central office repairman will carry this routiner from office to office on his regular routine visits. He will quickly plug it in and start it automatically checking the outside lines. Information obtained will then be turned over to the outside plant department. They in turn will dispatch a repairman to locate the faults.

The advantage of a portable line routiner is that it may be moved from main office to main office and from CDO to CDO, making it economically feasible to use in every office.

IV. OUTSIDE PLANT. Many companies have a Preventive Maintenance program for their inside plant, but none whatsoever for their outside plant. I am sure that you will agree with me that your ouside plant is just as liable to failure as the inside plant. Therefore, then, doesn't it stand to reason that we should have a planned "PM" program here also? Some people have asked me what kind of a "PM" program we can have for our outside plant. Well, I could spend a great deal of time on this subject. Briefly stated, we should periodically check, by various means, the poles, cables, cable terminals and wiring, open wire, drops, station wiring and instruments. While checking the station wiring, it is a good idea to check a few of the new installations. By so doing, we can determine the quality of work being turned out by each installer.

You would probably be surprised at what an effective public relations tool it is to stop at a subscriber's home for a "PM" check. You may only install a new number card, but this gives the subscriber a feeling that the company does care what kind of service they are giving. You can also integrate this with a merchandising program or a commercial survey. In small com-

SERVICE EVALUATION

Exchange Midtown

Month April 1961 — Total Main Stations 2120

Trouble Cause		No. of Tickets	No. per 100 Main Stations
Trouble Cleared	TC	101	4.8
Open Wire	OW	55	2.6
Pole Line	PL	-	-
Drop	D	24	1.1
Station Equipment	SE	31	1.5
Receiver Off Hook	ROH	16	.8
Central Office	CO	15	.7
Cable	C	-	-
Fuses and Carbons	FC	10	.5
Other	O	2	.1
Total		254	12.1

NOTE: To determine the troubles per 100 main stations, multiply the troubles by 100 and divide by the number of stations.

Fig. 2

panies, the commercial survey usually falls into the realm of the plant or engineering departments, thus while making a "PM" check, it is an easy matter to make or bring the commercial survey up to date.

V. TESTING EQUIPMENT AND PROCEDURES. Now that our automatic line routiner has indicated that we have troubles, before the customer is aware of them, let us discuss ways of locating those troubles.

Trouble shooting on the outside plant is a most difficult problem in the CDO. The repairman is on his own. He has no test board man, wire chief, or manager to help him. Therefore, we must provide him with the best tools available to help him do his job as efficiently as possible. In this connection, an old saying comes to my mind which I believe is applicable here, "If you need a tool but don't purchase it, you pay for it but don't have it."

Almost all CDO dial units are equipped with a wire chief's test circuit of some sort. We should see that our outside plant repairmen understand the use of these units. Other necessary test units for the outside plant repairmen are: A good wide scale volt-ohmmeter; a dial test set, of course; a directional finding test set.

It is surprising to find that a number of companies still do not provide their outside plant men with direction finding test sets. This item has been produced by several manufacturers for many years, but for those of you who are not familiar with it, I will describe it.

It is a lineman's test set with a magneto talking and ringing circuit. It also has a circuit which sends a tone out on the physical line when you crank the magneto. If there is a short or ground on the line, the lineman places his line clips and a clip-on exploring call to the line. He then listens in the receiver while he cranks the magneto. If the trouble is in the direction of the exploring call from the test set, the lineman will hear the tone in his receiver. If the trouble is in the other direction, he will not hear a tone. Thus he is able to determine the direction of the trouble without opening the circuit. He also has a light which he observes as he is cranking the magneto. If it is bright, the trouble is close, if it is weak, the trouble is more distant. With a little practice, a lineman becomes an expert in the use of this set. It is a "must" for the CDO repairman.

VI. SERVICE EVALUATION. With our inside and outside plant routines set up and operating on schedule, we must be giving the best possible service. However, in order to be certain, we should continually evaluate that service.

I will briefly outline one method of so doing.

(1) Faithfully write trouble tickets on all trouble reports even though the trouble may have already been reported.

(2) When the trouble is cleared, classify the cause. The classification should then be placed on each ticket, such as: TC (for trouble cleared), D (for drop trouble), CO (for central office trouble), etc.

(3) At the end of each month, we count the total tickets by exchanges and the tickets in each classification. We then determine the number of complaints per 100 main stations. I have shown an example of this in *Fig. 2*. You can graph the results monthly and compare it with others who are evaluating their services in this manner. If you have never evaluated your service, you may be surprised at the results.

VII. PUBLIC RELATIONS. Now we may be giving the best possible service, but if the subscriber doesn't know it, we are still not meeting our objective. The subscriber bases his feelings towards us on many things, but basically on the service we provide and the contacts we have with him. As a rule, neither we nor our employes live in the CDO community. We do not own personal property there, spend our money there, nor have social contacts with the subscriber. Therefore, we must see that our outside plant employes are our ambassadors of goodwill.

VIII. EMPLOYE RELATIONS. I believe we will do a much better maintenance job if our employes are well adjusted. Keeping a happy employe is most difficult in the CDO. The plant man in the main office is in and out during the day. We, their supervisors, chat with them, have lunch with them perhaps, instruct them and help them. In so doing, we build a relationship with them. On the other hand, our CDO plant men leave the first thing in the morning and don't return until quitting time, or after. It is, therefore, very difficult to have any relationship with them whatsoever. Thus, they have a tendency to become frustrated and to pass this frustration on to the subscribers. In order to avoid this, we should hold regularly scheduled instruction and discussion periods. We should meet them out in the field and help them with their problems.

IX. CDO BUILDING. Another ambassador of good-will in our CDO community should be our building. The CDO building is one which is seldom seen by the management of the telephone company. For this reason, I believe that we have a tendency to build the plainest possible building, let the weeds grow around it and forget it. We overlook the fact that the people who do see it every day, whose community it is a part of, are our CDO subscribers and our potential subscribers.

Before writing this paper, I discussed CDO maintenance problems with a friend of mine. He has a close relationship with many small telephone companies. I asked him to tell me honestly what improvements he felt they could make. His comments were, "Frequently I find that the door to the CDO building is ill fitting, allowing dust to sift in. The building is poorly heated and ventilated, making it cold in the winter and hot in the summer. It is poorly lighted and the blue prints are filed in an apple box." These conditions discourage the employes from doing their best work. For a very nominal expenditure, these conditions can be remedied and the CDO building made a pleasant place to work.

X. THE COST. The second part of our objective is to give good service at the least possible cost to the subscriber and to earn a fair reurn on the investment. One of the major costs of operating a CDO is that of transportation. Some of my company's CDO plants are located as far as 95 miles away from the main dial office. In order to combat this, we are using the economy line of trucks and cars. Our employes like them and they are cutting our costs.

Adding to our transportation costs is the problem of dispatching trouble reports to he repairman in the field. As an example, the repairman picks up his trouble reports and drives to the distant CDO. He calls in frequently for trouble reports and makes a final call just before leaving for the trip back to the main office. Just after his last call, the main office receives a trouble report but, of course, our repairman is now on his way home. The obvious answer to this problem, is the use of mobile radio-telephone. By using mobile radio-telephone, we will not only improve our repair service, but will encourage our customers to use mobile radio-telephones in their business.

XI. CONCLUSION. In summarizing, I believe that in order to give the best possible service, it is necessary for us to have a planned preventive maintenance program inside and out. We must provide our employes with the best tools available to do the job. We must maintain excellent public and employe relations, and continually evaluate our service. If we are to operate at the lowest possible rates and to earn a good return for our stockholders, we must be ever watchful for ways to cut our operating costs without sacrificing service.

The program of plant maintenance which I have presented to you is no doubt elementary to some of you, but new to others. I feel that my time and yours, has been well spent, if among the group here, I have convinced only one of you to go home and organize a preventive maintenance program. If you do this, I am certain that you will not only give better service, but will also, over the long haul, save money for your company.

Offends All

An egotist is a man who talks so much about himself that he gives me no time to talk about myself.—H. D. WAYLAND.

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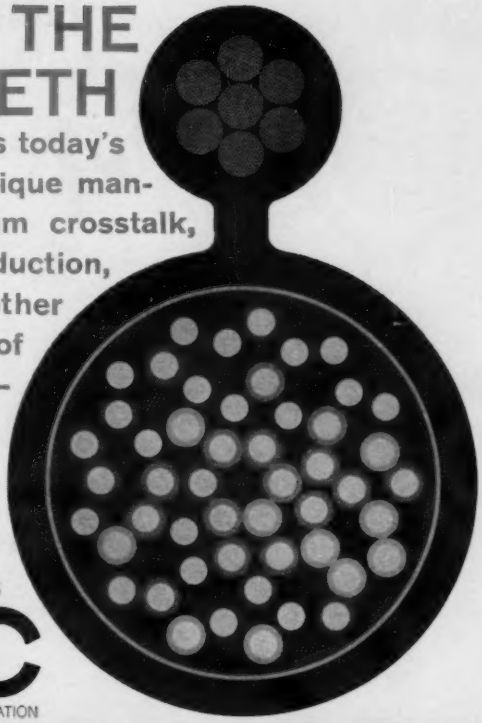
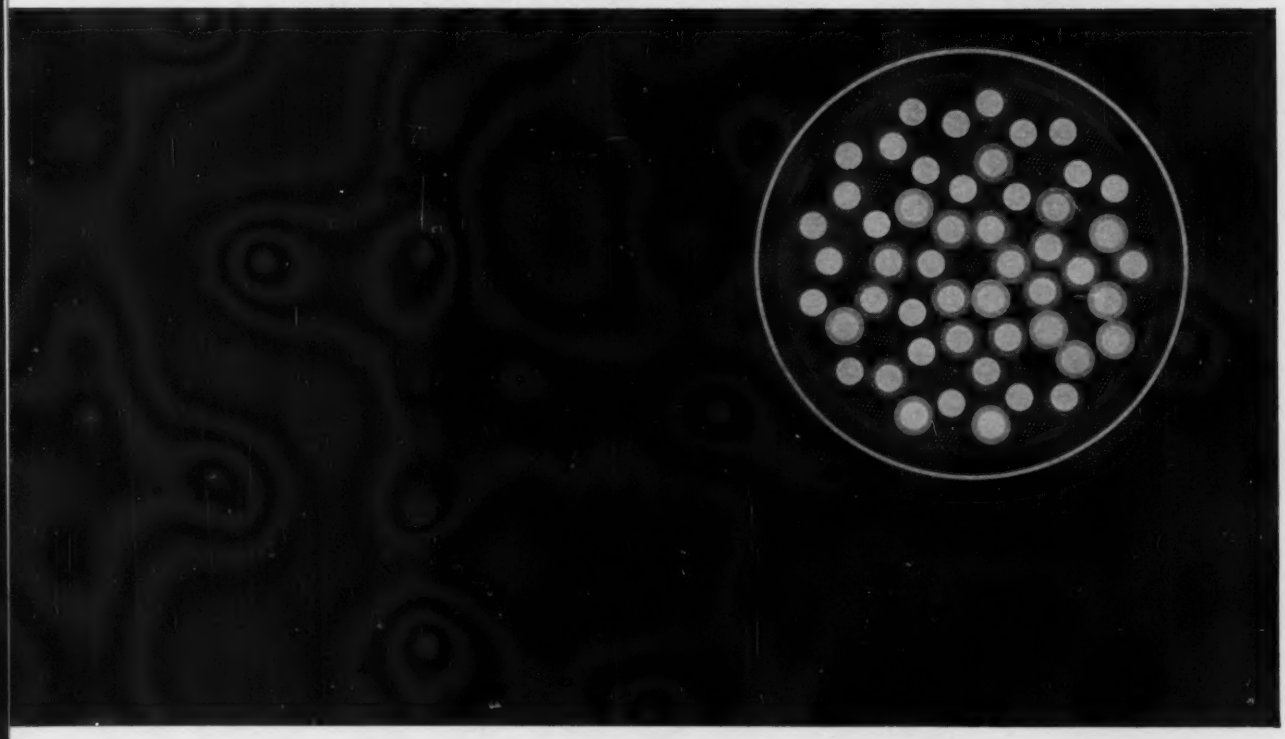




Buried Cable and the Problem of Maintenance

By GUY L. CHILBERG

(A Plant Conference Address)

IT'S A REAL pleasure to have this opportunity to talk with you on the subject of buried cable construction and problems of maintenance. I'm convinced that this technique holds as much, if not more, promise for reducing capital expenditures and maintenance expenses as well as improving service in the outside plant than any other single possibility.

However, because of the range of the subject, I'd like to restrict my comments to buried plant as it exists in urban situations rather than to try and include rural as well. There are many materials, tools and techniques which are common to both urban and rural buried plant. However, there are probably as many dissimilarities as there are similarities and I fear it would be impracticable to do justice to both applications in the time available.

Started Five Years Ago

Also before I start, I'd like to clarify one point. I can recall underground urban installations of 30 or more years ago, and I am sure many of you gentlemen can also. However, you will note that I used the word *underground* rather than *buried* in referring to these older jobs and therein lies the difference. The jobs I have reference to were placed entirely in conduit and were economically infeasible except as luxury, custom installations. Today's type of *buried* urban distribution that I am talking about is a far cry from those former costly *underground* jobs I am referring to systems that at least, under favorable conditions, have a lower first cost than conventional aerial plant.

The Bell System and some of its operating companies really started down the road of economical buried urban distribution about five years ago. In that period, we think we have learned quite a bit, but the more we learn the more we realize there is to learn in this relatively new field.

In contrast, telephone companies across America have been building aerial plant for over three-quarters of a century. About 10 years ago most of us were convinced, I'm sure, that we had refined to the ultimate, the tools, methods and materials involved in aerial distribution plant. However, in the last five years, we have seen no less than a complete revolutioin in this field. I have reference to the availability and use of color coded PIC cable and the ready access terminals that facility made possible. Is it any wonder, then, that we say we are just starting to learn regarding economical buried distribution plant which is really not much more than about five years old?

Why Buried Plant?

Before we go any further it might be well to raise the question "why buried plant" at all? Aerial plant is proven refined, readily available for maintenance, and our forces are accustomed to its construction and maintenance. Why aren't we satisfied with aerial plant?

I'd say there are five principal factors that influence us in looking toward economical buried distribution plant. These are, but not necessarily in sequence of importance, appearance, first cost, maintenance cost, service and safety.

I'm sure I don't have to spell out the appearance considerations. Not even the most dedicated and enthusiastic telephone man is apt to brag about the esthetic impact of utility poles on an otherwise lovely residential area. This factor has become even more pertinent in recent years with the advent of low, ranch house type structures combined with the unfortunate habit by most developers of stripping the trees off a plot before they start building. The public reaction is evidenced by the periodic rash of proposed legislative measures at the city, county and state level to either abolish or restrict all overhead utility plant.

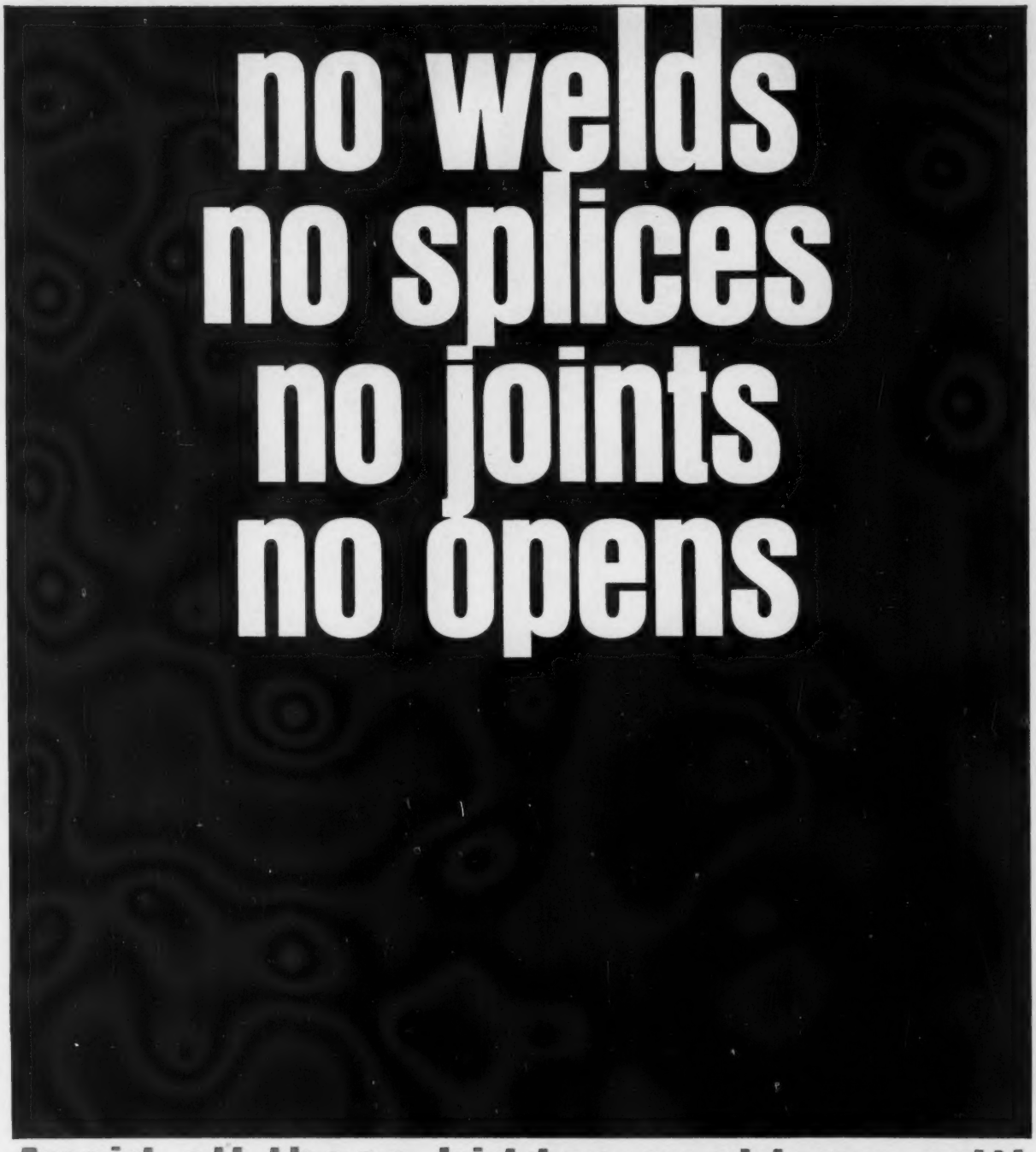
First Cost

And now as to first cost. I'd like to confine my remarks to those situations where conditions are favorable to buried as contrasted to aerial distribution plant. And, by favorable, I mean where there is real cooperation between the developer, the telephone company and the power company (if power also is going underground), where soil conditions are conducive to easy plowing or trenching, where the developer is building on a systematic and progressive basis on all lots in the area and, of course, when it is possible to avoid construction during periods of frozen soil, if we are talking about parts of the country where that climatic condition exists.

Under these conditions, it has been definitely established that buried telephone distribution plant can be constructed at an appreciably lower first cost than aerial plant. That is not to say that it costs more to build buried plant if *all* these conditions do not prevail, but merely that, where they *do* prevail, first cost economy in favor of buried can definitely be expected. The situation is even more favorable to buried plant where curving streets would require a large number of anchors and guys for aerial plant.

But what about maintenance expense? I'll concede to begin with that it costs more to correct an average failure in buried plant than it would to correct a corresponding failure in aerial plant. The difference, however, lies in the fact that buried plant is inherently much less exposed to physical damage than is aerial plant. The net result is that the annual maintenance cost per unit of buried plant is less than for aerial. Naturally, this main-

* Mr. Chilberg is with American Telephone & Telegraph Co.



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tenance cost advantage is even larger in those locations that are susceptible to those banes of a telephone man's life —sleet, ice, wet snow combined with wind, and particularly, tornadoes or hurricanes.

Improved Service

The comparison on service is one of the simplest to document in favor of buried plant. . . . Aerial plant failures during storm conditions cost maintenance money to restore—lots of it. But they also represented total service failures and long periods of delay. The fact remains that buried plant just isn't exposed to most of the service hazards that plague aerial plant.

During the year 1960, the Bell System, excluding our Long Lines Department, suffered 82 per cent more cable trouble per sheath mile on aerial plant than it did on buried plant. And this is in spite of the fact that a larger part of our exchange aerial cable is under gas pressure than is the case with our exchange buried cable.

And, last, but not least, safety. Two of the principal causes of lost time and fatal accidents are falls with or from poles and electric shock. Need I only mention that we do not use poles in buried plant and that exposure to electric shock in buried plant is almost non-existent. I sincerely feel that we, in telephone management, have a moral as well as an economic responsibility to do everything practicable to reduce accident hazards in our plant design to the absolute minimum.

Design Considerations

There are probably few portions of a telephone exchange plant more systematized and refined from a design viewpoint than aerial distribution—not so, however, at least as of today, with buried distribution. True, this stems in no small degree from the fact that economical buried plant is relatively new, but I imagine we will always have quite a range of design possibilities from which to pick and choose when designing buried distribution, depending upon local situations. So I'd like to cover a few of the more usual layouts together with some of the considerations that affect their selection.

Probably the most typical and usually applicable is the so-called rear property line layout. In this case, there is usually a 10-foot utility easement extending 5 feet on each side of the property line. Telephone uses the 5 feet on one side of the property line and power 5 feet the other side. Pedestal terminals are mounted on alternate lot corners so that each terminal will serve approximately four lots. If power also is underground, they usually mount their transformers on the other alternate lot corners so as to separate power and telephone distribution points. This layout is ideally suited to the average development. It obviously, however, is not applicable where lots are unusually deep, due to the long service wire runs that would exist there.

J. D. Palmer (left) and R. C. Mason both of Chicago.

In some locations, the rear property line layout described above is made utterly impossible due to the developer's practice of scraping all the top soil into a small mountain range along the rear property line. I might mention that this is typical of most of the large developments on Long Island. One of the solutions to this problem is to lay the distribution cable along the rear of the houses, looping it up through a terminal mounted on the side foundation near the rear of each house.

Minimum Trenching

Obviously a substantial part of the cost of underground distribution plant accrues from the cost of trenching or plowing, whichever method is used. Substantial economies can naturally be expected if the amount of trenching can be reduced. Accordingly, Michigan Bell Telephone Co., in cooperation with Detroit Edison, and Illinois Bell Telphone Co. in cooperation with Commonwealth Edison took steps a few years ago to reduce the joint cost of trenching. They agreed, where both power and telephone were going underground, to use a common trench to minimize trenching costs. To meet existing code requirement, they provided 12 inches of well tamped earth for separation between power and telephone circuits. . . .

(See "Joint Telephone and Power Buried Construction," TELEPHONY, Sept. 9, 16 and 23.)

The common trench layout referred to above produces substantial economies over the separate trench design. However, part of the potential economies are dissipated due to the cost of the 12-inch partial backfill and tamping which is necessary before the telephone facilities can be placed. This cost problem was recognized by the joint Bell System-EEI Sub-comittee on buried plant which has been operating since 1956. Accordingly, the sub-committee, through the cooperation of Line Material Industries, instituted extensive joint trench-random separation trials at the Line Material's high current test plot in Wisconsin. Results of these trials indicated that random separation of power and telephone facilities in a common trench was entirely practical from both a service and safety viewpoint with certain feasible precautions.

Commission OK's Trial

On the basis of the foregoing trial results, Illinois Bell and Commonwealth Edison jointly applied to the Illinois Commerce Commission for authorization to institute an actual trial. The commission has authorized such a trial wherein the power primary and secondary as well as the telephone cables will be laid at the same depth in a common trench with only random separation. The authorization is for 10,000 housing units. I might hasten to add that the power primary and secondary facilities are of a special design that make them readily identifiable from telephone wire and cable.

The first of these installations is now under construction and preliminary results indicate that the savings will be even greater than originally anticipated. One of the techniques that makes this saving possible is that agreements have been worked out between the telephone company and the power company whereby one company will be responsible for doing all the trenching work and placing

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both power and telephone cables in each development. This responsibility will, of course, alternate so that each company will do its fair share of this construction work.

Before I leave design considerations, however, let me again stress that I am talking here about *buried* and *not* underground (conduit) systems. It is axiomatic that no conduit system for distribution plant can compete economically with aerial construction.

Construction Tools

There are three principal tools involved in placing buried cable and service wires. These are plows, trenchers and pipe pushers. Let's consider them separately.

It is generally accepted that plowing, where physical conditions permit this method, is substantially cheaper than trenching for buried plant. Fortunately, we are finding that there are many more places where it is feasible to plow within urban distribution systems than was originally expected. This is largely a matter of construction technique and experience and I am sure that, as we go into the future, we will find it feasible to plow even more extensively than we do at present.

There is quite a range of plows available in the open market that are designed expressly for cable-laying purposes. No one plow will suffice for all purposes and under all local conditions. Generally speaking, however, we have found for urban use that small track laying plows with attached articulating blades are most suitable. The track-laying characteristic permits better flotation and traction. The articulating rather than separate towed plow reduces equipment length and is more maneuverable.

Soil Great Influence

Trenchers cover a very wide range of sizes and characteristics. The soil conditions have, if anything, an even greater influence upon trencher requirements than is the case with plows. Generally speaking, we find that a relatively light mobile type of trencher is best suited for those installations where we trench the service wire. A somewhat heavier duty trencher appears to be more suited for the longer straight runs where we are placing distribution cable.

Also there are inevitably situations where pavement is placed before we can get our cable in. Here, any form of cable placing that involves breaking the ground surface is naturally expensive due to the cost of restoring pavement. Pipe pushing is the obvious answer. Unfortunately, however, only a few of the pipe pushers, and none of the push pipe commercially available, proved entirely suitable for telephone use. However, the pipe pusher is no better than the push pipe. To date, we have not found a commercially available push pipe sufficiently sturdy to be entirely satisfactory.

Accordingly, the Bell Laboratories designed, and we are having made for our use, a heavy duty sectional push pipe that has been spectacularly successful. The pipe itself is made of double extra strong steel pipe. The lead unit, slightly larger in diameter than the push pipe, is especially prepared for us. We find that the successful use of this push pipe is dependent upon having the lead unit slightly larger in diameter than the push pipe itself, thereby reducing the friction between the pipe and surrounding soil as it is pushed through the earth.

Materials and Equipment

Four principal equipment and material components are involved in a typical distribution system. These are the terminal, distribution cable, service wire and house attachment. Each of these components have been modified and refined during the last few years, but very satisfactory examples of each are now commercially available.

We use conventional alpeth PIC distribution cable of the same type that is normally used for aerial distribution except in gopher territory where gopher tape protected alpeth cable is used. However, in view of the frequency with which the cable is looped at terminals, real care should be exercised to prevent damage to the sheath and consequently the possibility of moisture entering at a subsequent date.

We normally use a two-pair service wire as the added cost of the second pair is very nominal whereas the cost of subsequent reinforcement, if a second line is later required, would be quite substantial. . . . It (the wire) has a spiral aluminum shield which should be bonded to a ground at the customer's premises and to the cable shield at the terminal.

In the interest of economy, a very simple terminating device appears appropriate at the premises as a junction between the service wire and inside wires. This, of course, would be a fuseless protector if the system is exposed or a simple terminal block if the system is entirely unexposed. If the layout calls for a cable along the rear of each line of houses and looped through a terminal on each base, a terminating box is naturally not required.

Construction Methods

And, now, as to the use of these tools and materials. As before stated, the determination as to whether trenching and/or plowing is optimum in a given situation depends upon a variety of local conditions. However, wherever plowing is practical, it is obviously the least expensive method of getting both cable and service wires into the ground.

If the distribution cable is to be plowed, terminal locations should be determined in advance and a slack loop of proper length established at each terminal point. Where the service wire is to be plowed, it is frequently desirable to use a trencher to dig a "start pit" immediately adjacent to the foundations of each house so that the plow can start at full depth.

If the service loops are to be plowed and the distribution cable trenched, it is usually desirable to plow in the service loops first leaving an adequate coil above ground at the location where the service wire meets the distribution cable trench. Then as the distribution cable trench is completed, the previously plowed service wires can be laid in the trench to the serving terminal.

If it has not been possible to place cable (or a section of single duct conduit) under all street crossings before they are paved; the pipe pusher is invaluable. It should be recognized, however, that the pipe pusher is only used to make a hole through the ground—a section of conduit is not required here. In fact, the cable can be pulled directly through the hole formed by the push pipe as the push pipe is pulled back by the pipe pusher.

Crew organization and job planning together with a selection of optimum types of trenching and/or plowing equipment is the answer to an economical job. This means, however, that proficiency in these functions must be developed by the crews before an economical job can be expected.

Problems of Maintenance

Before considering detailed maintenance problems of buried distribution systems, it might be well to point out certain fundamental characteristics of these systems and the materials involved.

PIC cable has some outstanding advantages for buried use. However, it also has certain disadvantages which should be recognized in order to minimize their consequences.

If sheath defects are introduced through careless or faulty construction work, water can enter the core at a later date. Because of its loose core, and the fact that the polyethylene conductor insulation will not swell when exposed to moisture, water can run for considerable distances from the point of entry in buried PIC cable before it encounters adjacent conductor defects that would make the presence of water apparent. Conversely, however, a substantial amount of water in a buried PIC cable may only affect a few pairs, whereas, any appreciable amount of moisture in a paper or pulp cable will probably cause a complete failure of all pairs.

For these reasons, we favor designing buried distribution systems using all above ground terminals and splices so as to essentially sectionalize the

(Continued on page 133)

EASY
TO
INSTALL
EASY
TO
SERVICE

INDIANA TERMINAL HOUSINGS

FOR BURIED WIRE AND CABLE

Terminate, splice or load your buried wire and cable with absolute tops in protection —specify dependable, labor saving INDIANA TERMINAL HOUSINGS. They're extra-rugged steel, heavily hot-dip galvanized after forming to combat corrosion. Available in pedestal or pole mounted types, and in sizes to handle from 1 to 400 pairs. The expertly engineered design of INDIANA TERMINAL HOUSINGS insures easy installation... fast connections... ready accessibility for servicing... negligible maintenance. For details, write for Catalog TH-101R. Indiana Steel & Wire Co., Muncie, Indiana.

INDIANA STEEL & WIRE COMPANY, INC.

Increased On-The-Job Fire Training

By M. M. "SMOKEY" BATZER

(A Plant Conference Address)

HELLO OPERATOR—get me the Fire Department right away—this is an emergency . . ." As telephone men, you are probably all too familiar with this sort of panic-stricken call. The telephone companies of North America handle thousands of them every year. And by connecting callers cooly and quickly with the Fire Department—or relaying information to the Fire Department—your industry plays an indispensable role in cheating fire out of a still more savage death toll and yet greater property losses. Take a bow gentlemen, you deserve it.

Today, however, I'd like to take this opportunity to take you behind the scenes, as it were, and tell you about some aspects of the fire menace with which many of you may not be quite so familiar.

11,350 Lives Lost in 1960

Would anyone care to guess how much fire cost the United States in 1960?

No? Well I'll tell you.

In terms of lives of men, women and children the cost is 11,350. That's one life every 47 minutes; 31 lives per day. In addition to the dead, untold thousands are seriously injured by fire every year, many of them sentenced to spend months in hospital, many of them maimed for life and many of them unable to earn a living ever again. Everyone remembers the terrible school fire in this very city—not many months ago.

In terms of property damage alone, fire cost runs well in excess of 1.5 billion dollars per year. Get that? One thousand, five hundred million dollars in cold, hard cash every year. This appalling economic waste—and that's the only way you can describe it—would have more than built the St. Lawrence Seaway, the hydro power phases of the Great Project excepted. Putting it another way, the 1.5 billion dollars in annual fire loss represents 3.3 per cent of *total U.S. corporate profits before income taxes* for 1960.

Fire is a vicious, wanton thief and killer that respects no one.

Grows More Serious Annually

It is one of the most serious problems that confront the continued prosperity of the North American economy today. It is a problem that is growing more serious annually; and one that we are all guilty of doing too little about.

What makes the terrific annual loss of life and property due to fire even more tragic is the fact that virtually all of it could have been prevented through proper care and proper training.

That's why I want to talk to you about fire and to show you what a formidable and frightful enemy it is.

Fire loss figures are apt to be misleading. Virtually every one of various sources you look at may give you a different dollar amount for losses sustained in any given year. Claims paid out by fire insurers are often taken as a useful yardstick. But even these present far from the whole picture.

Some companies are self-insurers with excess catastrophe coverage only in case a whole plant is gutted; some insure only part of the risk. Others carry no insurance at all. In the case of residential fires and fires in small business establishments, losses frequently exceed the amount of insurance carried.

Intangible Loss Great

These are accounted for by the intangible losses that business and industry sustain as the result of fire—losses that can't be measured in direct dollars and cents terms, and some that probably can't be covered by any insurance—such as the heart-aches.

There are many of them.

Various surveys in the U.S. have disclosed these basic generally sobering facts about severe business and industrial fires:

Forty-three per cent of the concerns hit by bad fires were unable to resume operations.

Seventeen per cent of those firms able to furnish financial statements before a fire were unable to do so afterwards.

Fourteen per cent suffered a severe reduction (from 30 per cent to 66 per cent) of their credit ratings.

Twenty-six per cent, unaffected as to credit rating, nevertheless suffered a severe loss in customer relations.

Just think about that for a moment.

If you expose yourself to fire risk, priceless records, documents, equipment, and the like, which took years to produce and assemble and which are the very life blood of your business, may go up in smoke in a very few minutes.

Loss of Records Serious

I'm thinking, for example, of the records of the accounts of your customers. If these were to go up in flames, you would be hard pressed to determine who had paid their telephone bill and who had not; who owed for what long distance calls and how much.

Equally, you can insure a central office building and the equipment it contains. But if fire were to reduce it to a crumbled mass of brick and twisted metal, it would probably be months before many of your subscribers could again have telephone service from there.

Despite the fact that it always manages to ring as soon as you are in the bathtub, it is indisputable that the telephone today is an indispensable part of the nation's business and social life. Police and fire departments depend on it to a large extent and may use private telephone and teletype networks leased from telephone companies. To the businessman, the telephone is of vital importance—many of his orders come in on it; much of his material is ordered over it. The average housewife would not feel nearly so secure in her home if she could not instantly telephone for police, the fire department or a doctor. She would probably argue it is of almost equal importance to be able to swap gossip with Jane, Susie and Mary, call Mother in a far off city, and order hubbie's beer, forgotten on the last trip to the "Super Market" or the corner grocer.

Left to right: Jack Bell of Caro, Mich.; N. R. Smith of Newport, Mich.; J. J. Baker of Port Hope, Mich.; K. T. Straw of Caro, Mich.; E. F. Saxton of Lansing, Mich.; E. S. Herzog of Hale, Mich., and R. E. Thuemmel of Port Hope, Mich.

Telephone Service Vital

All of this brings me to a very important point: As the telephone is so very much an integral part of our daily life, there rests on the telephone industry—probably more than most other enterprises in North America—the moral duty to do everything in its power to see that telephone service is *not* interrupted by any controllable hazard—especially fire.

If fire cuts off telephone service, people may die for want of a doctor, the police may be powerless to deal with crime, businesses may falter and a host of other misfortunes can befall the community. Your responsibility, therefore is a heavy one.

There is also the human element to be considered. In North America, business and industry help look after the employes' welfare in many different ways. Employers contribute to unemployment insurance; many pay part of health, sickness, life insurance, and pension plans. They may even offer a stock purchase plan so that employes can participate to some extent in the profits of the business.

Surely the very life of the employe is no less important than the fringe benefits he receives!

Proper Training Needed

I think everyone in this room would do everything in his power to avoid having to call on the wife of an employe—the mother of five children let us say—to tell her that she has become a widow. Yet each year there are dozens of executives on whom this sorrowful duty falls.

The real tragedy is that, in almost every instance, death could have been avoided by proper training and proper precautions, taken at the proper time.

There's another important consideration: Insurance costs.

Bear in mind, too, that fire insurance companies aren't set up as charitable institutions.

And I'll tell you right now that the last time I made this suggestion, a business man came up to me and said: "Smokey, who are you trying to impress? You should see the premiums I have to pay each year."

Well, that's exactly the point.

Fire Costs Everybody

The insurance principle is very simple. Premiums are collected from the many to cover the losses of the few. If industry has a bad loss record this year, everyone's premiums go up to compensate for it in the future. Thus fire costs *everybody* money. It's a vicious circle, and you can't beat it any other way than by cutting down the fire losses.

And there's much more to the insurance angle than just that.

If your plant has a bad fire record, believe me, you are going to feel it in the size of the insurance premium *you* pay—if, in fact, an underwriter will carry you at all.

As I said a moment ago, insurance companies aren't charitable institutions. They, like you, are in business to make money. They come in gauge the risk, and set premiums accordingly.

Indirect Losses Great

This will suffice, I think, to show how great and how far-reaching the economic and social implications of fire losses are.

Let me just add this: Some authorities even suggest that the *indirect losses* due to fire are more than *five times greater* than the actual damage to any property. To the best of my knowledge, no one has yet been able to contradict this statement.

The real problem in industrial fire prevention today is not one of equipment; it is one of "training and attitude."

Contrary to widespread opinion, there has been nothing radically new in methods of extinguishing fires for many years. Our same basic tools have, for the most part, been in use for the past 50 years, or so.

The real deciding factors in whether there will be a fire loss or not, are these:

Have fire hazards been recognized and effectively eliminated?

Do plant personnel know—instinctively—what to do if fire breaks out, how to do, where and when to do it?

Has the plant aligned itself with the fire fighting and fire protection services and facilities that are available to it?

Turning in Alarms

I'd like to tell you a true story. It happened to me in a certain pulp and paper mill while I was doing some in-plant, fire protection training.

I went up to an employe standing at the uncomfortable backside of a large costly paper machine.

"Suppose", I said, "you discovered a fire here on the floor, a fire that was big enough so that you couldn't positively stamp it out with your foot. Now what would you do?"

Know what the reply was?

"Well," he said, "I guess I'd get the hell out of here. I'm not paid for fighting fires."

That was the unfortunate attitude of this employe. Sure he might have saved his own bacon by getting out of there. But by running, instead of turning in an alarm and bringing portable fire-fighting equipment into play, he would have given the fire a big head start and helping hand. That fire—undetected for even a few more minutes—could have endangered the lives of many other employes and burned the mill to the ground.

Now you may very well say: "Ah, Smokey, that happened in a practice run, but it wouldn't happen if a real fire were involved."

Want to bet?

Another Sad Example

Here's a case almost as bad. I'm quoting from a fire commissioner's report of a fire at a seminary and classical college which burned with a loss of $1,176,120.

"While welders were installing a new metal stairway fire broke out in an unsprinklered shallow roof space of the otherwise completely sprinklered 9,500 square foot, five-story brick, wood-joisted building. Welding sparks were the probable cause.

"The welding crew attacked the fire with several portable fire extinguishers but the alarm was not transmitted until someone outdoors saw smoke pouring from the building. The fire spread through the unsprinklered parts of the roof space and although sprinklers operated in certain parts of the roof space and in the fifth story to protect these areas, they had no effect in the unsprinklered areas.

"Hose streams also were unable to reach the fire raging beneath the roof.

"Eventually the roof collapsed, breaking sprinkler piping in the fifth story and later the bell tower fell in and caused most of the building to collapse."

Left to right: Clarence Elder, L. A. Kemnitz both of Chicago; D. L. Baxter of Franklin Park, Ill.; Charles Crisp, John Carmichael, both of Chicago, and Bert Young of Auburn, Neb.

Alarm the Key Again

Don't misundertand me, let's give those welders full credit for doing their duty as they saw it. But the critical point is they attacked the fire with hand extinguishers and the alarm wasn't transmitted until some one outdoors saw the smoke. It's a matter of history and record now that by the time smoke was sighted, it was too late. If the alarm had been turned in immediately, there's a chance the building might have been saved.

Think that's an isolated case?

Same report, same year, as a matter of fact, same area, and I quote:

"Restaurant et al; (loss) $514,530. Four buildings housing stores and apartments. Originating within a non-fire stopped partition in the first floor restaurant, fire was first discovered when heat ignited papers on the floor adjacent to the partition. Employes attacked the fire with buckets of water but the fire persisted and when it started to spread along the wooden and combustible fireboard interior finish, they fled and notified the fire department.

"Flames were coming from the roof of the 215 foot by 70 foot, three-story wooden building when firemen arrived. Fire spread to two wooden buildings on one side and one on the other before sufficient fire apparatus could be assembled to make an effective attack."

Fiddling While Rome Burns

Get that? Fire spread to two buildings on one side and one on the other before sufficient fire apparatus could be assembled. It may be a hard, blunt way to put it, but it boils down to fiddling while Rome burns.

I cannot stress too strongly that it is within the first 30 seconds of the life of a fire that the most effective headway can be made against it—even by people of limited know-how.

Few realize the speed with which small fires get big and uncontrollable. For example, it is often pointed out that an average fire at the end of two minutes is three times as large as at the end of one minute. At the end of four minutes it can be 25 times as large as it was at the end of two minutes. And at the end of 10 minutes it may be 100 times as large or larger than it was at the end of four minutes.

These estimates are conservative. Where combustible vapours of petroleum and similar products are involved, the acceleration rate is much more rapid.

Minutes Really Count

It follows, therefore, that more can be done with less know-how and less equipment in the first 30 seconds than the best trained and equipped fire department can often accomplish when it arrives on the scene 10 or more minutes later. That is why management must accept the challenge of getting the man on the job level to realize he must deal with a small blaze intelligently and immediately, whether or not this is part of his particular job. If management doesn't succeed in this mission—it is missing the boat.

When dealing with fire protection problems, we often hear the term fireproof. Unfortunately, fireproof is one of the most abused adjectives in the English language.

There are virtually few substances on earth that won't burn under certain conditions. If there were, scientists wouldn't have had to spend so much time and effort trying to devise methods to effect re-entry of space rockets into the earth's atmosphere.

Left to right: S. F. Tremayne of Chicago; J. A. Cheeseman of Washington, D.C., and J. F. O'Loughlin of Chicago.

Water Isn't Always Answer

Probably one of the materials that comes to mind most easily as one that supposedly won't burn is water. That's because water is widely used to extinguish fires. However, we need only recall that during World War II many incendiary or fire bombs were dropped by both sides. To fight the resulting fire with water was soon found to be suicidal. The reason: An incendiary bomb, being made out of a material called Thermite, burns at about 8,400 degrees Fahrenheit. When water (H_2O)

(Continued on page 135)

Microwave users

GET "RELIABILITY"

use C&D PlastiCal® or PlastiCell batteries—*
combined with a C&D AutoReg® Silicon Power Supply

To be sure of continuous, never-failing power for microwave systems, power them with a combination of a C & D battery and an *AutoReg* Silicon Power Supply.

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Specify C & D, and choose the standby power package best suited to your equipment.

PlastiCell—37 sizes with 14-year life, lead antimony plates, covering 10 to 1680 A.H.

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For complete details and specifications write for Bulletins T-532 (PlastiCal) and T-533 (PlastiCell) plus Bulletin AR-108.

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Report of USITA Traffic Committee

By A. W. LAMBERT, Chairman

DURING THE past year, the Traffic Committee held two meetings with Bell representatives. The first meeting was held in Washington, D.C., on May 9 and 10, 1961 at the USITA headquarters, and the second meeting on Aug. 22 to 26, 1961, in New York, at the AT&T headquarters.

All members of the Traffic Committee were present at both meetings. This report will not cover the detail of traffic subjects that have been brought before the committee during the two meetings mentioned. It will, however, cover the committee's proposed procedure, whereby such detail will be disseminated to the Independent industry, a resume of the meetings and its plans to work with Bell traffic representatives.

At each of these meetings, the first day was restricted to members of the Traffic Committee to review the agenda and develop subject matter that would be discussed with Bell System representatives during the days following. It is very gratifying to report that both USITA committee members and Bell representatives were unanimous in their opinion that joint meetings would promote a better understanding of each other's (Bell and Independent) traffic objectives and problems.

At the meeting held in August, Independent traffic people, other than committee members, were invited to the conference, and two attended. It is planned to continue extending invitations to Independent traffic people at future committee meetings with Bell representatives.

The Traffic Committee appreciates the Bell representatives' cooperation in these joint meetings for they gave unstintingly all information requested by the Independent people attending, particularly regarding their future plans and planning with respect to the traffic aspects of new and proposed services.

At the meeting held in May, the committee (a) prepared an outline of the program for the Traffic Conference at this convention; (b) reviewed the traffic portion of separation procedures for the 1961 nation-wide study and made recommendations to the sub-committee on Message Toll Settlements; (c) together with Bell representatives, prepared an agenda for the August meeting.

At future meetings, committee members will prepare a memorandum on each subject discussed, as was done at the August meeting. These memoranda will then be edited and released to the industry through the USITA office as a "Traffic Committee Bulletin". Subjects involving Bell System operations and planning will be edited for accuracy and clarity, jointly with Bell representatives. The Bell undoubtedly will release the "bulletin" to its associated companies.

At the August meeting with Bell representatives, all subjects on the agenda were covered. A copy of this agenda is attached hereto and memoranda on these subjects will be the foundation for the first "Traffic Committee Bulletin". It will be noted that this agenda, for the most part, includes new and proposed operating techniques related to new and proposed services of the Bell System. At this meeting, Bell and Independent problems and suggestions were "laid on the table" and were discussed objectively and without reservation, each being mindful of the other's problems.

The Bell representatives had prepared for this meeting by arranging to have their specialists available to discuss and answer committee questions on each of the subjects on the agenda. Each member of the Traffic Committee was assigned certain subjects on which he was to take notes and later prepare memoranda. As stated previously, these memoranda will constitute the "Traffic Committee Bulletin".

You will note that the first subject on the agenda is, "Communication between AT&T and USITA Traffic Committee regarding Traffic Practices of Industry Wide Significance". It is the consensus of the Traffic Committee and Bell representatives that this is a most important subject, for the better the communication between the Bell and Independents, the better informed are we of the Bell System's plans and objectives, particularly with regard to new services.

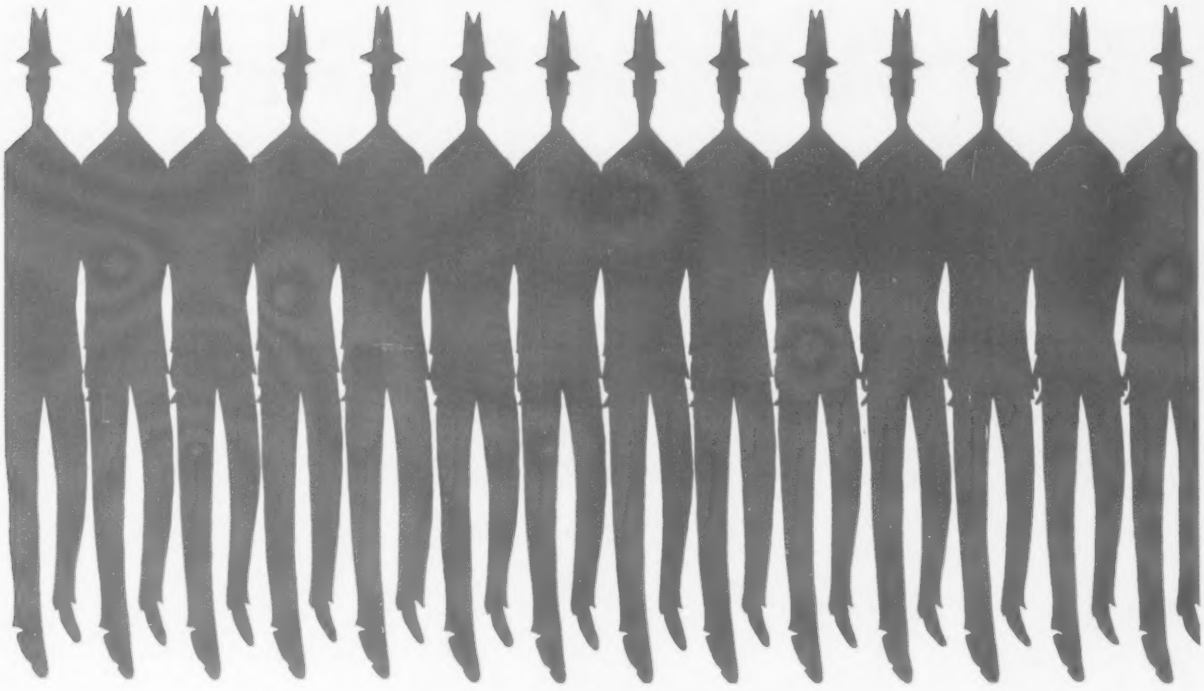
At both joint meetings of the Traffic Committee and Bell System representatives, there was general agreement that improved liaison in the traffic area between the two segments of the industry would be of genuine benefit to all concerned.

It is of interest to know that the traffic department of AT&T made a departmental review of existing routines being followed to keep the Independent industry currently informed. After this review, and as a result of our Traffic Committee being available to meet on more frequent occasions, changes have been made in the AT&T internal practices which will result in much closer liaison between our committee and Bell traffic staff people. Information which we are sure will reach the Traffic Committee at a much earlier time as we go into the future includes such matters as operating practices, changes in facility arrangement, and other current traffic development pertaining to subjects which are of general interest. As a result of the two meetings with AT&T representatives, it is apparent they feel, as does the Traffic Committee, that the Bell System, as well as the Independent industry, will benefit by this exchange of information, which is of mutual interest.

This does not mean that traffic matters of mutual interest will be limited to the Traffic Committee members. They will be included in the "Traffic

(continued on page 93)

Here Come New Subscribers



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No need to rip up your old installation when you install the Panhandle Urban "X". It is especially made for use on existing cable, and provides 20 high-quality two-way voice and signaling subscriber circuits on a four mile basis.

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Write today for full details on the most economical and best method of caring for new subscribers. Let new engineering concepts help you to *increase your profits...lower your costs.*

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(below)

ACTUAL SIZE:
3 columns by 10"

the STARLITE telephone

Less than half the size of a regular phone!
Takes less space on a table or desk. Now you can have a step-saving extension at hand even where space is limited.

Style-right wherever you place it.
Use the Starlite in the kitchen, living room or at your bedside. And you can choose from six colors: white, ivory, beige, pink, blue, turquoise.

Lighted dial!
Starlite glows in the dark so you can find the phone quickly. Makes a handy night light, too! You can turn the dial light from soft to bright —or completely off.

You'll like this sparkling new phone...and so will your friends. Order your Starlite today. It costs only pennies a day. Just call our business office.

small in size...
smart in style
...and it has a
lighted dial!

YOUR TELEPHONE COMPANY

MAT NO. 2

(at right)

ACTUAL SIZE:
4 columns by 21"

the STARLITE telephone

Less than half the size of a regular phone!
Takes less space on a table or desk. Now you can have a step-saving extension on hand even where space is limited.

Style-right wherever you place it.
Use the Starlite in the kitchen, living room or at your bedside. And you can choose from six colors: white, ivory, beige, pink, blue, turquoise.

Lighted dial!
Starlite glows in the dark so you can find the phone quickly. Makes a handy night light, too! You can turn the dial light from soft to bright —or completely off.

You'll like this sparkling new phone... and so will your friends. Order your Starlite today. It costs only pennies a day. Just call our business office.

small in size...
smart in style...
and it has a lighted dial!

YOUR TELEPHONE COMPANY

MAT NO. 3
(at right)
ACTUAL SIZE:
2 columns by 5"

the STARLITE telephone
small in size...
smart in style...
and it has a
lighted dial!
Saves space on table or desk. Starlite is less than half the size of a regular phone!
Smart appearance. Starlite is style-right wherever you place it. Choice of six colors.
Lighted dial glows in the dark! Helps you find the phone quickly. Makes a handy night light, too!
Order your Starlite today! It costs only pennies a day. Just call our business office.
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MORE NEWSPAPER AD MATS

To help you sell Starlite* phones!

Last Fall, we sent our customers a newspaper ad mat on the Starlite phone. The response from telephone companies was overwhelming. Because of the demand for this type of sales aid, we have produced *three new* ad mats on the Starlite phone (shown here).

These new ad mats are designed to help you promote the Starlite phone in your local newspapers. We also suggest that you ask the editor to give you tearsheets of your ads for display in your office or wherever it will be seen best by your customers. To get your free ad mats, just fill out the coupon (at right) and mail today.

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AUTOMATIC ELECTRIC SALES CORPORATION
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Gentlemen:
We want to promote the Starlite phone in our local newspaper. Please rush us your three new ad mats which feature the Starlite phone.

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COMPANY NAME _____

STREET ADDRESS _____

CITY _____ ZONE _____ STATE _____

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★ Steel case assemblies available for manhole mounting and direct earth burial.

TYPE C124 LEAD CASES

Equipped with Types 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils. Contain 4 to 76 coils—lead or plastic stubs.

TYPE C125 STEEL CASES

Equipped with Types 632 (22MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

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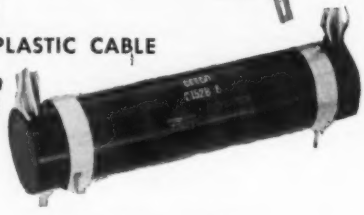
Using one to sixteen Type 632 (88MH), 638 (44MH), 642 (88MH) or 641 (44MH) coils.

TYPE C152 CASE FOR PLASTIC CABLE

Sizes—One to twenty-eight coils. Using Types C652 (88 MH) or 651 (44MH) coils.



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C-100 TEST SET

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Economical
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C600A1 Case equipped with 10-C1574A Inductor capacitors or loading coils for mounting on horizontal side of MDF.

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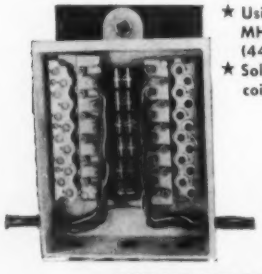

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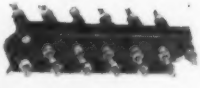
(FOR ALL STANDARD PARKWAY TERMINALS)

16 PAIR No. CP16-137



12 PAIR No. CP16-136

6 PAIR No. CP16-135

2 PAIR No. CP16-134

ONE PAIR No. CP16-133

CAPACITORS TYPE C-1574-1 INDUCTOR

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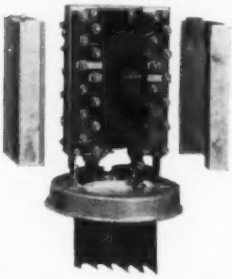
PEDESTAL TERMINALS



TYPE LUG (Shown With C637A Coils) Complete With Terminal Strips and Protection Side Plates
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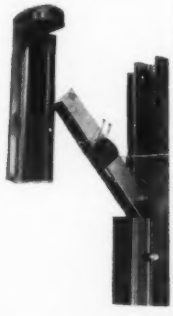
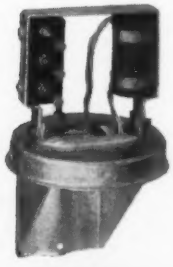
TYPE CBD Same Construction Only Galvanized



TYPE LU-1 Wire Terminal



LA-3 Pole Terminal With CP16-135 Six Pair Ready Mount Terminal Assembly and One C-152-3 Loading Coil

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TRAFFIC COMMITTEE REPORT

Concluded from page 88

Committee Bulletin", for if they are not, then the Traffic Committee has not performed its responsibilities to the association membership.

This responsibility may be briefly stated as "consider general problems pertaining to traffic and, particularly, the improvement in standardization of traffic operations of Independent companies".

In this regard, the Traffic Committee needs assistance from the industry to fulfill its responsibility. It is sometimes said "that the left hand doesn't know what the right hand is doing." Therefore, if the traffic personnel in our Independent industry would inform the Traffic Committee of matters that are problems, or would make suggestions or recite situations, the committee will include such information on its agenda for future meetings with Bell representatives.

Conference USITA Traffic Committee
and
Bell Representatives
Aug. 22 to 24, 1961
195 Broadway, New York City

AGENDA

(1) Communications between AT&T and USITA Traffic Committee regarding traffic practices of industrywide significance.
(2) Engineering of interexchange circuits.
(3) Plans of AT&T with regard to M-TWX.
(4) Traffic aspect of WATS.
(5) New developments in traffic practices.
(6) Use of area codes with long distance calling.
(7) Direct dialing of person-to-person calls.
(8) Traffic aspects of traffic service position.
(9) Access codes—Numeral "0" and "1"; Use of standard codes, i.e., Local Information Code (411); Universal Information Code (555).
(10) Uniformity of tones and recorded announcements.
(11) DDD service improvement.
(12) Toll abuse—Investigation of false use of credit cards and third number charges. Methods and practices to expedite apprehension of misuse.
(13) Procedures for taking supplementary peg counts.
(14) QZ numbers for special billing.
(15) National defense. Arrangements and procedures.
(16) Developments in mark sensing of toll calls.
(17) Centrex.
(18) Use of concentrators.

Citizen Politician

"The businessman should not . . . participate in politics as a businessman, but rather as a citizen. For when individuals use political office only to further the cause of an interest—whether that interest be business, labor, agriculture, or veterans' benefits, government by citizens may become government by pressure groups, and the legitimate objectives of democracy are subverted."—CHARLES H. PERCY, PRESIDENT, BELL & HOWELL COMPANY.

Left to right: L. T. Utz of Florence, Ky.; E. H. Utzman of Brownwood, Tex., L. T. Hayner of Chicago; Palmer Simonson of Bonduel, Wis., and H. R. Bollinger of Waconia, Minn.

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We, here at Leich, feel this way about the Independent telephone industry. We feel an obligation to put in our fair share to the industry that supports us.

Here's one for-instance: Several years ago we decided that telephone companies could really save on outside plant expenditures by the use of line-concentrators. We made arrangements with the original Swiss manufacturer. We spent several years developing the design, tools, skills and application. Frankly, we spent a pile of money.

Now—line-concentrators are an accepted, proven way to add to outside plant. All the things developed by your Independent telephone manufacturers do not have such a happy ending. But the time and years and the money need to be spent—if our industry is to make progress.

It's quite obvious. Your manufacturer must do a great deal more risk-taking than a distributor.

And that's why . . . we suggest you seriously consider your equipment manufacturer on all your telephone supply purchases.

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manufacturers of telephones, switchboards and related apparatus since 1907

The Traffic Department's Part in Public Relations

By Betty Wyman*

(A Traffic Conference Address)

AT A TELEPHONE convention I attended recently, two of the many fine speakers on the day's program were congratulating each other while waiting for the hotel elevator. The one speaker said to the other, "Jim, what is your opinion about telling a joke at the beginning or closing of a talk? I have heard there is a chance you could distract your audience by telling a joke at the beginning." Bob said, "Well, I only know from experience if I don't let them enjoy my jokes at the start—my talk has so distracted them, they can't enjoy them at the end!"

Telephone people are not distracted by the title communications service advisor. In fact, we find our customers like it, also. One large user told me the title PBX representative (our former title) reminded him the telephone company representative was there looking over their equipment, but communications service advisor gave him the happy feeling he once had as a stranded motorist. When he saw the AAA truck coming down the street he knew *expert* help and *advice* was there.

At this point we have made our most important gain—his confidence and trust in us. The traffic department's part in public relations is vital —more vital, I think you will agree, than in any other department of the telephone company. For just a moment let's take a look at ourselves.

We have plant, commercial, and traffic, which together, broadly cover our many operations.

Commercial for a large part, sees and talks to their customers as they come in to make *new* applications, *regrade*, or *move* their telephones. Those who have leisure time generally enjoy driving or walking to the local telephone building and paying their bills in person. Often they wish their toll or regular bill explained, and face-to-face we have the opportunity to explain, convince and keep our public relations at a high level which is fairly easy on a face-to-face basis. Of course, we are aware many of their contacts are over the telephone also.

Plant department installers and repairmen also face the public, but I am sure they are not questioned in their work nearly as much as commercial or traffic and many times they need not even enter the customer's premises to complete their work.

The *traffic department*, composed of long distance and communications service advisors, is without doubt the most talked about and most often contacted department of all. Here we have two extreme types of public relations. Long distance operators represent a telephone company to the public more times during any 24 hours than anyone—yet are never seen. Their voices, and their voices alone, must reflect the telephone company's *best* public relations. The communications service advisors, dealing with PBX customers who, in general, pay the highest bills of any subscribers, must go to *their* place of business—on the customers' own grounds—and those of us who have served the public from both our office and theirs know there is a difference. Public relations technique takes on a different atmosphere at the two places and the interview at either place must be well-planned and be quickly adaptable to changing conditions.

To indicate just how important to us are our PBX customers, our Bell System friends recently made a study which tells us that, while these customers constitute only a very small percentage (approximately one-half of 1 per cent) of total accounts, they represent 15 per cent of total telephones. Also, and listen to this, more than 25 per cent of all local switched messages and more than 50 per cent of Bell System long distance messages originate or terminate at PBX switchboards.

While these volumes may vary either way in your particular area, we imagine they are pretty well representative of the whole industry.

So you can readily see that it's only good business to prepare ourselves to cultivate and better serve this all-important customer of ours. In this connection, your communications service advisor can play a large role—in her capacity she is a built-in diplomat, apologist, public and human relations exponent, salesman, counsellor, trouble-shooter, expediter, recommender; she may also run a PBX operator employment clearing-house and can usually find time to lend a sympathetic ear to problems of PBX operators—on the job but ofttimes at home.

The selection of a person possessing the above qualities, and she is probably already in your organization, can go a long way toward solving many of your large business customer problems.

The duties of a communications service advisor are wide and varied and can probably be divided into four very general classes:

(1) Ability to be a diplomat.
(2) Having methods and technical knowledge of all departments.
(3) Thorough understanding of Public Relations.
(4) Ability to plan—coordinate and integrate all daily emergency calls into your set routine.

To see how well this can be done, let's look over a normal work week:

Monday was the cut-over date for a new Leich 100-T PABX at the City National Bank. A week before I had visited the firm with the marketing and sales counselor. He introduced me to the bank president and we discussed plans for a meeting of the entire bank personnel after closing hours to explain and show how they would operate from their stations and also presented our blue booklet.

* Miss Wyman is with General Telephone Co. of Florida.

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This booklet is made up especially for his firm. On the attractive cover is his firm's name and address and the type of PBX equipment to be installed.

(1) The first article to greet his eyes is entitled "PBX's Most Important Person—The Girl at the Board." This article, written by G. R. Brackett, appeared in Telephony, October, 1954. Although many fine pieces have been written along the same line and by Mr. Brackett, may I say so far I have not seen a more thorough or convincing one.

(2) Next is a sheet entitled *"Be a Telephone Diplomat,"* written by Allan R. Stacey for Telephone Engineer and Management in February, 1960. Using the letters that spell diplomat, he enlarges on the subject as:
Speak DISTINCTLY
IDENTIFY yourself
be PROMPT to answer
LEARN to handle impatient callers, etc.

(3) Article on *"Hold the Line on Out-of-Town Calls."*

(4) Standard codes used by our operators. PBX operators appreciate knowing what we mean by OD—DA—NF—U Few—LW and enjoy their work more when they understand and can work more closely with us.

(5) If their board requires use of a headset, an illustrated page for proper use of the 52 AW set is included.

(6) There is a special page on how to properly report cases of trouble on a switchboard—to obtain the speediest repair service.

(7) And last, but not least, a copy of our secrecy of communications sheet. We explain that our employes are so bound, and that they are free to treat it as they wish.

The booklet contains a few other items all intended to show the customer how important his telephone service and his employes are to *his customers* and how the telephone company works to inform and help him.

This accomplished, we went to the equipment room and talked with the installers to be sure all items included on our notice form would also be included at the cutover. Then, a chat with the operator, answering questions she had, and planning to give her some training on Friday preceding the cut-over. We also plan the directory which must be printed and ready for each station user at cut-over time.

Left to right: Mrs. K. M. Hunter, Kent Hunter and K. M. Hunter, all of Marseilles, Ill., and John B. McCann of Butler, Pa.

After lunch, I kept an appointment with a large PABX toll user who requested T&C on every call so the monthly toll statement could be checked. How many here are familiar with TNI (Trunk Number Identification)? Briefly, it's simple and easy yet savings to the telephone company *and* the subscriber are tremendous. We have one large firm whose toll bills run into many thousands of dollars per month, who hired a full-time accountant to check toll charges and assign them to their proper departments in the company.

I informed the manager of his firm's saving in trunk usage as well as operator time in answering the T&C call backs, and there was no secret made of the savings to the telephone company in eliminating T&C charge requests. After arranging to assign each of their rotary trunks (except the first one) to a different deparment using toll, and then placing a sticker on the extension user's telephone to remind *him* what number to charge his tolls to, the operator was informed of the procedure. I presented him with copies of a TNI toll bill to explain how it would look—TNI was complete. Within 10 days the manager called back to thank us for our fine *service* and *savings* to his firm.

Tuesday was a different challenge with three contacts to be made at hotels and motels upon request of our chief operators. In these cases, incorrect operating practices by newly hired hotel employes were giving troubles to the toll room operators. This is a case where extreme diplomacy must be utilized to help these people for, as we telephone people well know, we can offer but the subscriber does not *have* to accept our help. It is up to us to make the offer so attractive they are happy and grateful to have the training.

Mel P. Brown (left) of Hendersonville, N. C., and T. Carter Thomason of Lancaster, S. C.

Left to right: E. P. Burney of Lafayette, Ga.; A. B. Pogue of Atlanta, Ga.; Howard C. Amick of Des Moines, Ia., and Kathryn and Elizabeth Journey of Higginsville, Mo.

The fairly new procedure of connecting the customer to the distant city information for *Address-Name* calls has been accomplished by a personal telephone call or personal visit to each PBX user, and then our division traffic office followed this with a very

Cable laying goes compact with new John Deere 1010

The new 40-engine-h.p. John Deere "1010" Crawler with 230A Cable Plow has the long-pull power and fast-handling flexibility to make buried-wire installation pay. Following dirt road grass lines out where it may be a mile between mailboxes, or plowing in drops in a new housing addition, the versatile, low-cost John Deere provides a number of advantages to companies of every size.

With minimum soil displacement, the unit lays multiple pairs of wire, or PIC as large as 1-3/16 inches in diameter, at any depth from 6 to 28 inches. No backfilling is required—cut is compacted by wheels of the line truck or by the tractor treads.

Wire or cable is inserted in the cable guide without cutting, threading, or splicing. Entire cable channel is opened by removal of a locking pin and retaining bar. Roller-equipped guides direct the cable through the plow, for minimum drag.

The John Deere 624 Bulldozer blade supports the reel carrier, or the plow can take its supply directly from a preceding line truck.

The John Deere dealer, listed in your "Yellow Pages" will be pleased to arrange a demonstration for you.

JOHN DEERE

TRACTORS
BACKHOES
CABLE PLOWS
AND
CONSTRUCTION
EQUIPMENT

informative letter addressed: Attention: PBX Attendant.

Wednesday was a day of programming. This is a part of our work I probably enjoy most. If I had to make a choice, although it would be hard to choose since all facets of a service advisor's work are exciting and challenging, probably I would choose this one. For customers who feel there is something wrong with their telephone customer-employe contacts, we offer programs geared to their particular problems. Sitting down with their management, we plan a schedule—a group of meetings, showing special films, using tape recorder programs, the voice mirror, and distributing booklets such as these, to each employee:

(1) What Every Telephone User Should Know.
(2) Open the Door by Telephone.
(3) Marvel at your Fingertips.

D. H. Hansen (left) of LaCrosse, Wis., and R. J. Riordan of Madison, Wis.

In this type of work the need to have people feel at *home* and *relaxed* during the meeting is absolutely necessary. Following the film, tape or talk, we ask for questions on their problems, and here is where your *skilled knowledge* and *tact* must meet their actual personal problem with a workable solution. Gratifying results come from these programs, as you see both management and employes accepting our suggestions and putting them into action for their firm's benefit.

Thursday, routine calls on our customers are important and they must be handled daily, together with our other work and emergency calls and cut-overs, which we all encounter. At cut-overs, the type of board determines whether you call back yearly, semi-yearly, quarterly, or more often. In a resort state such as Florida, some very large hotels operate for only four or five months of the year, and capacity registration, plus large conventions, make closer supervision and advice

Left to right: Chloren Krutsinger and Vaughn Brown, both of Louisville, Ill.; Walter Murray of Roxboro, N. C., and W. A. Pankey Jr. of Charlottesville, Va.

helpful to both customer and telephone company.

The *most important* public relations item on routine calls is the constant care necessary in the approach used as you meet the new operator at the board or greet those whom you know. The same approach to an operator who knows you (and you hope has learned to like you) cannot be used with a new girl you have never met before. She would be more suspicious that you were there to criticize her work; or the girl you meet on a new job who realizes you know she was dismissed from the last PBX job. And how about the new girl on the job you discover is a *retired* telephone company employe. She is often resentful of a younger woman coming to tell her how to operate a board! Some feel that, with their telephone company background, there is nothing new *you* could tell her.

The wonderful climate of the West Coast of Florida has brought thousands of retired telephone employes to live in our area and we find many of these men and women in full or part-time jobs with hotels, motels and other businesses. Believe me, we welcome them and in almost all cases find them the finest co-workers possible. . . .

Questions come not always from operators and many times not about switchboard service. The manager stops you about a color telephone at his home—could it be changed Tuesday, his wife's birthday?; an employe stops you about a toll call on his bill; the parking-lot attendant asks when service will be extended to the new sub-division he just moved into. So again tact, courtesy and diplomacy must quickly team up with your knowledge (or lack of knowledge on the particular subject) to give our customers definite, tactful or, at least helpful answers. And so we come to the last of the week.

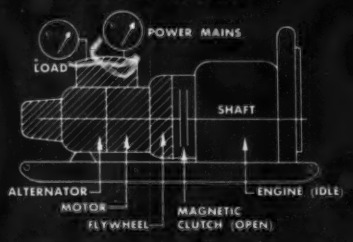
Friday—as you may remember on Monday, we made the appointment to train the bank operator this day. Today, we go over instructions for the 100-T operation in detail and answer her many questions, suggesting *she* study the instructions over the week-end and assuring her you will be back Monday and stay with her through the cut-over.

A rough week? No, a week of *service to others!* In this job you must like people and enjoy being with them. Knowledge—*yes*—you must have thorough training in your field and knowledge of all departments in the telephone business. You cannot be a specialist and be ignorant of the telephone business as a whole. You must love your work—remain happy to face each day's problems as well as joys! This is no place for discouragement or self-pity. Service to others is the most rewarding work obtainable and the telephone company is in that kind of business. Be prepared for the job, then meet each day with the dignity, aplomb and humility, which assures each contact that the traffic department's part in public relations has been capably handled by its communications service advisor.

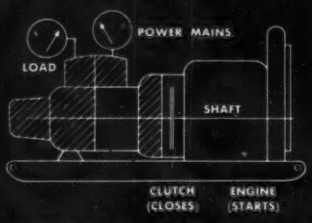
Left to right: Mr. and Mrs. C. C. Sandquist of Winchester, Ind.; Carl T. Moore of Harrison, Ark.; R. A. Fris of Atlanta, Ga., and S. L. Bell of Chester, S. C.

MICRO POWER . . .

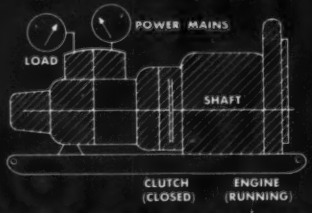
HOW IT WORKS



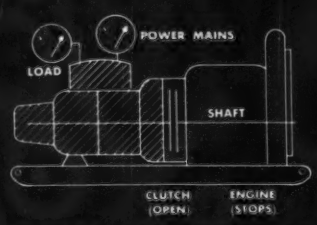
COMMERCIAL POWER MAINS NORMAL. LOAD SUPPLIED BY MOTOR AND ALTERNATOR.



COMMERCIAL POWER MAINS FAIL. LOAD SUPPLIED TEMPORARILY BY FLYWHEEL. STANDBY ENGINE STARTS, MOTOR DISCONNECTED FROM MAINS.



STANDBY ENGINE AND ALTERNATOR SUPPLY POWER TO LOAD. SWITCHOVER ACCOMPLISHED WITHOUT LOSS OF USABLE VOLTAGE.



COMMERCIAL POWER RESTORED. LOAD SUPPLIED ONCE MORE FROM MOTOR AND ALTERNATOR.

ANSWERS THE NEED

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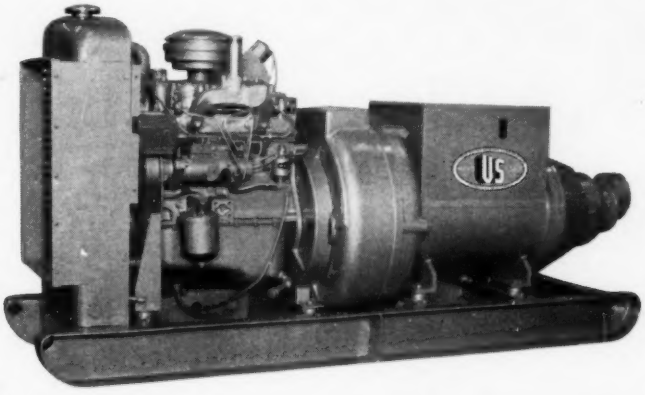

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Traffic Problems and Methods In Making a Separation Study

By R. E. PAULSEN*

(A Traffic Conference Address)

IT SEEMED to me that a proper approach to this subject would be to first define the purpose of a separation study, and outline in a broad manner the traffic department's role in making the study. We might then take a closer look at various types of traffic studies involved, and in the final analysis, find some other uses for the information developed in our studies.

The purpose of a separation study is to determine an Independent company's costs for handling a particular class of traffic. We will discuss separating costs of traffic interchanged with the Bell System, although the same procedures would apply if we separated exchange or Independent toll costs.

Up To Traffic

It is traffic's responsibility to develop traffic factors which, when applied to investment and expenses, will show the amount of dollars of equipment used or expenses incurred in the handling of this Bell-Independent (B-I) traffic. The importance of this responsibility can be expressed most effectively by obtaining the total dollars of investment or expenses of your company, then determining what per cent have traffic factors applied to them. Under a normal operation, I believe upwards of 90 per cent of investment, and over 75 per cent of expenses, would be separated on the basis of traffic studies.

The B-I portion of costs is segregated between three functions entitled "A", "B" and "C". All Independent companies perform the "A" function; many companies perform some and frequently all of the "B" function and some companies provide inter-exchange circuit facilities for B-I toll traffic, which is designated as the "C" function.

The "A" function covers the use of local plant facilities and traffic, commerical, accounting and general office operations in connection with the origination and temination of B-I toll traffic. The primary traffic factors for separating "A" function costs are developed from "usage" studies.

The "B" function covers toll operating and switching, such as the timing and ticketing and the use of toll switching plant and associated function relating to B-I toll traffic. "Unit" studies develop the primary traffic factors for separating "B" function costs.

The "C" function, commonly referred to as line haul, covers the use of Independent company inter-exchange circuit facilities for B-I toll traffic. Traffic factors for separating "C" function costs are developed from "Message-Minute-Mile" studies.

Separation studies are normally made for a 12-month period. Traffic data, such as minutes of use, units of work or message-minutes-miles are not available on an annual basis in the same manner as certain other information; as for example, expenses. In order for us to develop annual data, it is necessary to make studies of representative periods. These are commonly referred to as observation periods. These observation periods range in length from two to five days for usage and unit studies, and up to 10 days for a line haul study.

Usage Studies

I cannot over emphasize the importance of selecting observation periods which are truly representative of the 12-month study period. Local or toll calls, or both, are involved in all three types of studies. The volumes of these calls do not necessarily determine what is a representative period. The important factors to be considered will vary, depending upon the type of study being made; and I will discuss these as we cover each of the types of studies.

At this point, let's take a closer look at usage studies, or as they are sometimes referred to at holding time studies. These studies are made in exchanges, whether manual or dial, to determine the primary traffic factors for separating "A" function costs. The important consideration is selecting a period when the holding time per message, whether Independent toll or B-I toll, and the holding time per local call is representative of the annual period. I stated earlier that the volume of messages does not necessarily indicate whether a period is representative or not. It is quite possible to have a normal volume of messages, but due to the particular time of the year the holding time per call is out of proportion to the annual period. For example, at the beginning of school in the fall of the year the holding time per local call may be higher than usual, although the toll holding times are representative. Conversely, an office may have periods of the year where the toll holding time is abnormally high; whereas, the local holding time may be representative. I would not attempt to recommend particular periods of the year for your offices that would be representative, as I am in no position to do so.

Some Group Exchanges

The point I would like to stress is that the important consideration is the holding time per call. Calling habits vary with different exchanges and intimate knowledge of local and toll calling habits is the best source of information for selecting an observation period.

It is the practice in some of the larger Independent companies to group certain exchanges together for study purposes. For example, if a company had 10 exchanges of similar size and with similar traffic char-

(Continued on page 106)

*Mr. Paulsen is with The Southwestern States Telephone Co.

Once a wallflower...

seldom a bride! That is, if you don't take part. People almost always prosper when they do!

→ That's the basic reason behind USITA.

→ It's the keystone of Independent telephony—the force upon which independent telephone companies depend for many things they could not do individually.

→ Assistance in toll compensation. A legislative spokesman. An interpreter of regulations and trends. The authoritative source of information on technical and financial matters. Many more!

→ Most Independent telephone companies take part in today's USITA and one of America's busiest industries is the result.

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INDEPENDENT

USITA keystone of independent telephony

2 *new features expand your market*

CALL COMMANDER IS EASY TO OPERATE

To place outside call, press an unlighted Line button. When button lights and dial tone sounds, line is then ready for use.

To answer outside call, press button that has flashing light, and answer. A constant light indicates that the line is in use.

To hold call, press common Hold button. To remove line from hold, press button of line being held (indicated by "winking" light).

INTERCOM SERVICE

gives Call Commander more facilities

- Selective dialing for up to 36 stations
- Pre-Set Conference—up to six other people may be called simultaneously by pushbutton or dial
- Add-On Conference—enables you to add another person within office to an outside call
- Camp-On—reserves busy line for caller and automatically connects when line is free
- Privacy on intercom lines through the use of "talking link" circuits
- Busy tone feature on "talking link" circuits
- Control of station signaling device from two separate signal sources
- "Long line" connects an off-premise station to Intercom Service—also enables anyone to dial up to six stations consecutively (ideal for quick telephone conferences)

for **10-A1** *key system*

1 CALL COMMANDER® **telephone—an 18-pushbutton phone to meet every need**

2 INTERCOM SERVICE—**expanded intercom facilities to serve business better**

AE's 10-A1 Key Telephone System now offers your subscribers—large or small—*custom* communications, inside and out. Two new features are the reason: the Call Commander phone and the Intercom Service.

Call Commander operates like our regular key phone, but offers greater pushbutton capacity—up to 18 central office lines with the 10-A1 system. When combined with the Intercom Service, Call Commander provides many new and varied facilities (listed on opposite page).

Call Commander is modern and compact. Its slanted face, enhanced with clear lucite, makes lamp signals and number strips easy to see... easy to use. Available in two handsome colors: Sand Beige and Jade Green.

10-A1's increased flexibility puts prospects everywhere. It also enables you to expand present key system installations that are no longer adequate. Your revenue opportunity is unlimited. For full information, write for our free 10-A1 sales aids.

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New sales material describes 10-A1 Key System, Call Commander and Intercom Service. Includes circulars, model sales letters and ordering information. For your free 10-A1 sales aids, write: *Automatic Electric Sales Corporation, Northlake, Illinois.*

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GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

Left to right: P. H. Stewart of Seattle, Wash.; Ed Dempsey of Chicago; E. C. Kenyon of New York City, and Hank Schnulle of Chicago.

acteristics, usage studies would be made in, perhaps, two or three of the exchanges to develop holding times per call. These holding times would then be applied to annual volumes of calls for all 10 exchanges to develop the necessary data. This method, if agreed upon with the representatives of the associated Bell company, would, of course, reduce the number of studies to be made. It is a practical and sound approach to separations. However, the key to this method is the selection of exchanges that will be representative of the entire group.

I am sure you will agree that some offices are easier to study than others due to equipment arrangements. There may be other considerations that would affect your selection of studied exchanges; for example, an exchange may be a greater distance from the general office and due to location, transportation problems may be greater than for another exchange. Perhaps the living accommodations for the person who is to make the study are not satisfactory. I would like to caution you to give such conditions a minimum amount of consideration. Unless the exchanges you select have traffic characteristics which are representative of the entire group, you may well cause your company to lose revenues amounting to many times the inconveniences of studying particular exchanges.

Study Total Traffic

There is a primary difference in making usage studies as compared to unit or line haul studies. In unit and line haul studies we count the various classifications of traffic separately and arrive at the total by adding these components together. In usage studies, however, we study the total traffic and then subtract out the portion of traffic to be separated. I believe this characteristic of usage studies warrants special consideration and a few minutes of our time this morning discussing it.

When studying the various classes of traffic to develop separation factors based on traffic units, we study each class of traffic by itself; for example, all classes of traffic that are considered local, whether information, dial assistance or manual. We also study the toll traffic on an individual basis and classify it as Independent, B-I state or B-I interstate. The total units for an office are developed by adding the units for the various classes of traffic together. It is not possible to use the same procedure when making usage studies. When studying originating traffic at the first selectors, or terminating traffic at the connectors, there is no practical way to determine whether the call is a local call or a toll call. As a result, these studies are used to determine the total office traffic.

Another study of trunks carrying toll traffic is made to determine the toll portion of the total. It is important, therefore, that the count of toll usage be accurate and complete. If some portion of the toll traffic is omitted, the traffic factors will be affected by showing an increase in exchange usage and a decrease in toll usage, as compared to the actual conditions. If the omitted toll usage is B-I, it will result in a loss of toll revenue which is properly due your company from the Bell System. A thorough review of all trunking diagrams should be made prior to any usage study so as to avoid the omission of toll traffic.

Before leaving the subject of usage studies, I would like to say that I purposely omitted any discussion of the details involved in making these studies since the USITA Separations Manual covers this subject very adequately.

"B" Function Costs

Unit studies are made in all exchanges having telephone operators who perform some or all of the work on B-I toll calls. The primary use of traffic factors developed from unit studies is to determine "B" function costs. Studies are made of all units of work performed by the operators. The study is initially made of the various classes of calls handled and the units are developed by applying proper coefficients to the calls. The coefficients generally used are those developed by the Bell System. Effective Oct. 1, 1960, new coefficients were placed into effect throughout the Bell System. These coefficients resulted in a substantial decrease in the work units developed. In addition to the coefficient values being changed, the classifications of outward toll calls was completely revised.

An important consideration in making unit studies is again the selection of the observation period so as to be representative of the annual study period. Traffic characteristics will vary depending upon many factors. These characteristics will also vary within the same office during different periods of the year. In certain offices it might be practical to make studies for two different observation periods to develop factors which are representative for the entire year.

Resort Area Example

For example, let's suppose a toll center office was located in a resort area and the toll traffic increased during the busy season from 40 to 50 per cent, and if this increased traffic consisted of very long haul and a high

Left to right: Arnold Desnoes of New York City; B. J. Sexton of Chicago; Mrs. Sexton; W. R. Roy of Ft. Wayne, Ind., and P. H. Arnold of New York City.

percent of person calls, the over-all coefficient for the office would be increased as compared to the slack period of the year. Likewise, the B-I traffic factors would be higher if the observation period was scheduled during the busy season. There would be little, if any, effect on the exchange or local traffic factors. In the event an office had two distinct periods as described above, each of which were about six months in length, a practical approach would be to make unit studies in each of the periods. These studies could be then composited to develop the necessary traffic factors to be applied to annual volumes of calls. In the event you have an office where the toll coefficient increases or decreases depending upon the time of the year, you might consider making two studies.

Many offices are making unit studies for purposes other than a separation study. These would be made periodically for the purpose of developing current coefficients to ascertain units of work per employe hour, generally referred to as operators work load. The frequency of these studies will depend on the characteristics of the office and where they change during various periods of the year new studies are made to develop accurate coefficients. Reference to these studies will be helpful in selecting a representative period for observation purposes. In offices where these studies are made only on an annual basis, other factors will be helpful in selecting the observation period.

For example, you may find your office experiencing difficulty during certain periods of the year in carrying a reasonable load while providing satisfactory service. During other periods of the year the same office might carry higher loads and still render the same grade of service. This would indicate that during the period of lower loads the office is handling more difficult types of toll traffic; perhaps the per cent station traffic has decreased and the number of person, collect and long haul traffic has increased.

Many Classes of Calls

Remember that the most important consideration in making unit studies is to develop final traffic factors which are representative of all messages handled by each office for the entire 12-month period.

Unit studies require the counting of many different classes of calls. It is, of course, important that these counts be made accurately and the persons involved in making the studies have a thorough understanding of the classifications of each type of call. Some of the counts will be made by use of peg count meters or tally slips by the operating forces handling the calls. Other counts will be made from ticket records. For those offices who use mark sense tickets the count of outward toll items is made in the accounting department by use of IBM machines. For those offices not using the mark sense toll ticket the count is usually made in a centralized peg count bureau.

Left to right: John A. Brazee of New Haven, Conn.; Mr. and Mrs. R. A. Wadsworth and Mr. and Mrs. R. H. Herrick, all of Lorain, O., and Charles G. Cumpstone of New Haven.

One of the problems involved in obtaining the necessary information from outward toll tickets is to avoid delaying tickets from reaching the accounting department in time for billing. We should, therefore, avoid scheduling unit studies during the latter part of the billing period. The amount of time required to obtain the necessary information from these toll tickets will depend upon the number of persons available for this purpose after the tickets are received in the centralized bureau. It is desirable to have a steady volume of toll tickets coming into the bureau so as to insure an even work load for these employes.

One of the methods our company has used to solve this problem is the use of a portable microfilmer. Our unit studies supervisor who is in the central office at the time the study is being made, microfilms all toll tickets the morning following each day's study. At the completion of the study, the tickets are mailed directly to the accounting department with a minimum of delay. The microfilm is then processed and mailed to the centralized bureau. The use of microfilm insures an even flow of work for those persons taking the information from the tickets.

End of Directory Period

Information traffic constitutes a large part of the exchange or local units of work. It is, of course, important to schedule the observation period for unit studies so that the information calls are representative of the entire year. Annual information units are determined by developing the number of information units per local originating call or line finder registration. The volume of information calls per local originating call will vary depending upon the observation period selected as related to the date new directories are issued. As you know, information calls increase throughout the life of the directory. We should, therefore, avoid making unit studies near the end of a directory period, as it will cause the per cent of independent units to be higher than if the study was made near the middle of the directory period.

The third type of traffic study developed for separation purposes is the line haul study, or message-minute-mile study. These studies are made where an Independent company owns toll circuits which carry traffic interconnected with the Bell System. The message-minute-mile study traffic factors are developed to determine what portion of this toll investment is used for handling B-I traffic. These are referred to as "C" function costs.

I know of no study that will provide you with the knowledge of your toll circuit plant as will the message-minute-mile study. These studies are made for a 10-day period, again, which is representative of the annual traffic carried by these circuits. The factors developed from the 10-day study are applied to annual volumes of line haul messages to determine final traffic factors. Here again, representative volumes of messages for the ten days may not produce the desired information. The length of conversation of these messages, when expressed on a conversation per message basis, should be representative of the annual period.

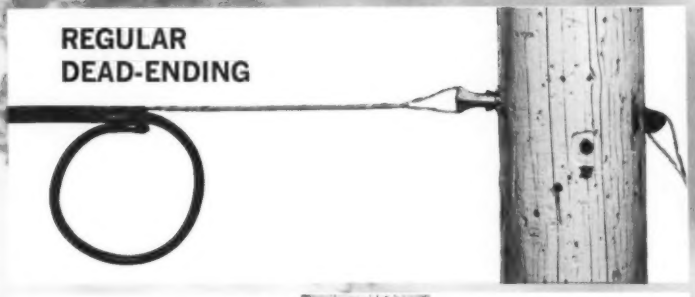
The complexity of the message-minute-mile study will depend upon the number of toll circuit groups owned by the Independent company and the number of these circuit groups which carry inter-connected traffic. Where a certain class of call is carried over Independent circuit groups, care must be taken to include the conversation minutes over each of the circuit groups. The studies must, of course, be made to show the routing of this traffic on an accurate basis. Routing instructions used in summarizing line haul studies must, therefore, be current and factual. The classification of this traffic as to Independent, B-I intrastate or B-I interstate must be accurate and in agreement with line haul messages reported by the accounting department for settlement purposes.

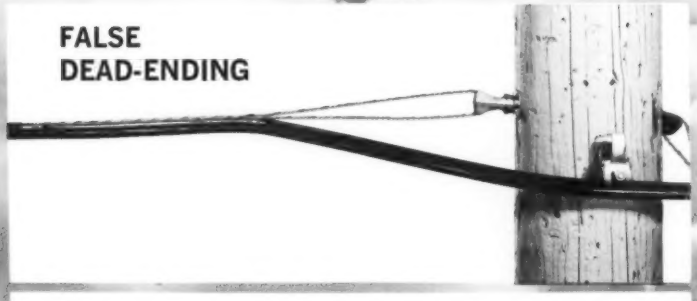
We have discussed the various types of traffic involved for separation purposes. At the completion of a sepa-

(Continued on page 137)

FIGURE Preformed

TRADEMARK





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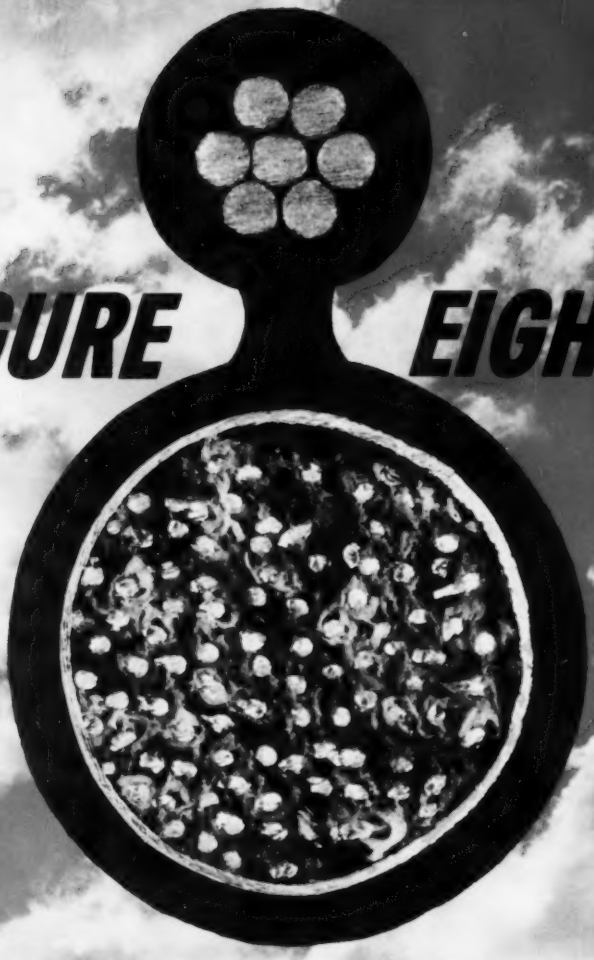
FOR FIGURE EIGHT



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The Chief Engineer Views The Traffic Department

By R. K. GHORMLEY*

(A Traffic Conference Address)

WHAT A WONDERFUL industry in which we work! Look what's been happening in the last 20 years. In the U.S.A. the number of telephones has grown from 21,928,000 in 1940 to 43,004,000 in 1950, and on to a magnificent total in 1960 of 74,300,000. That's an increase of well over three times in two decades.

What's more, the density of telephones in this country has been on the increase. Back in 1940, there were 16.8 telephones for every 100 people in the U.S.A. By the end of 1960 that figure of 16.8 had grown to 40.8 telephones for every 100 folks, a splendiferous explosion.

So if figures mean anything—and I think they do—the telephone business has surely been strutting its stuff and busting its buttons.

And what's been happening to the people that have the job of providing all this service? Have they had a few problems? Have they found it necessary to make a few changes from time to time? Have they wondered, "Which way is up" on occasion? And can they now sit back and take it easy over a fight well fought and a battle won? Yes, Yes, Yes, and No.

Had Hands Full

There's certainly no doubt that operating telephone companies have had their hands full. Each segment of the operating team has been hard pressed. For these remarks to you, I'm going to narrow the field down to only a part of that operating team—the traffic department. We'll not spend much time over the "battle won." Instead, let's look together at what's up ahead for traffic people. As they say on TV, "It's what's up front that counts." So, how about what's up front?

One of the continuing requirements ahead of you in traffic will be a constant review and revamping of operating methods. You have done splendidly in the past. Can you do even better? You will want to be constantly alert to catch the change that means better service or lower operating costs—or maybe both at the same time.

I'm not sure you've always been as alert to this as you might have been. For instance, would you agree that you held on to the sacred method of completing "TX," or delayed, calls entirely too long? Were you guilty of thinking more about a high "per cent completed" index than about giving the calling subscriber the fastest service? Do I unjustly accuse you? Maybe so, for you did see a need for a change and made it. The "Oregon Plan" ranks as the type of action you have taken in the past that you must be ready to take in the future. Don't let subservience to an index, or to custom, or to uniform practices, blind you to a better way of doing it.

Now that I've made enemies of all of you, let's move along to another of your changing responsibilities.

New Basic Services

You traffic folks will feel the effects of new basic services offered to the public. You must be sensitive to these demands and constantly up-date your thinking. You may even have to try to outguess the future on occasion.

What will be the impact on you of WATS, PPCS DDD, MTWX, data transmission; whatever comes after mark-sensing, personal signaling, wide area information, ANC, and a few more neither of us knows about now? In your spare time you could well be kicking some of these around. Not all of these will affect all of you. I would be surprised, however, if there is anyone here who is not to be touched by at least one of them. And do you realize that with few exceptions, these are services or methods practically unheard of just 10 years ago? And you must be on your toes—not just to answer a question in case someone asks, but to take the initiative where it reasonably falls in your jurisdiction.

For example, whose job do you visualize it to be to know about data transmission? Why, that sounds messy enough—it must, therefore, rightly belong to the engineers! Not so! Not so! (Or at least not entirely so.)

Wasn't it the traffic department which went to the subscriber with the new PBX board? And you patiently explained which cord to plug in where? And what was the purpose of the battery cut-off key? And how to put up the night connections? Yes, you did (and do) those things.

Job of Telling Subscribers

Isn't it also your job to go to the subscriber and help him out with his new gadgetry that hooks his business machine into his telephone and transmits data? The business machine people will tell your customers something about it. You better know, too. If your telephone customer wants to know about some mystical device associated with his telephone, you don't want to be embarrassed by pleading complete ignorance. This might even require your boning up on business methods.

And how about WATS? Are you digesting enough of what this service concept is all about that you can talk intelligently with your commercial folks? Which of your customers is a candidate? Got any ideas? And how would you propose to go about giving such service next month if need be? Would you have some training problems?

Maybe your company doesn't have a single prospect for WATS service? Yes, that's possible. But if it's so, do you have a scheme in mind to keep tab on the situation? Are you ready to prod when the time is ripe?

It may not be your primary responsibility in your particular company to be attentive to new services. Maybe

*Mr. Ghormley is Chief Engineer of the Lincoln (Neb.) Telephone & Telegraph Co.

yours is only a small share. Whatever the proportion, you must keep abreast of the field and ready and pushing to help your company realize the full advantages of new services.

So far, we've touched on new procedures and new services. How about a new slant to old stuff? I think you may have some of that as a part of your changing responsibilities too. How about, for example, that "old hat" item of "traffic engineering"?

Traffic Engineering

Traffic engineering in your company may be almost non-existent. Or it may be a large effort, depending on the size of your company. These remarks won't fit all cases.

Historically, the traffic department has usually been responsible for seeing that there is enough equipment to meet service demands. Not many years ago, this amounted to seeing that enough girls were on the switchboard to keep the lights put out. This was true for both local and toll.

Then along came local dial service. Many companies installed intertoll switch trains. And what was the effect on traffic responsibilities? The responsibilities were still there. I suspect that often times they have been overlooked. Did the installation of an intertoll switch train relieve the traffic people of the need for a continuing check as to the adequacy of switching equipment? How many installations have been neglected until complaints of overflows prompted a look at switch quantities?

But you say you're not guilty of these oversights? Fine! Then how about the future? Do you have something in mind to improve the way you are keeping tab on traffic? Don't be satisfied with "methods as usual." There must be a better way to do that job. If you are still doing it the same way you did it five years ago, you are probably wrong.

Should Use Machine

If you are making that check manually, then you probably should be using a machine to do the job. You say you already have a machine making traffic measurements? Then I ask, does it do a complete job? Are the data in the most usable form? Have you recently looked at the whole procedure with a cold eye intent on weeding out useless information, and planting needed information?

The degree to which a company will mechanize its traffic reading program will largely be influenced by its size and complexity. Regardless of size, it must know as accurately as possible that it is investing in the right amount and types of equipment. It can only know by intelligently measuring the traffic. You traffic people can no longer know this answer by looking to see if the lights are standing. You must, must, MUST update your methods to keep pace with the quickened technical pace. And in most cases this throws out manual methods.

Left to right: Mr. and Mrs. W. H. Knoedler of Mosinee, Wis.; Mrs. Kay Adair of Dumas, Ark. and R. C. Reno of Chicago.

To new procedures and services, we've added new approaches to traffic measurements. Now let's take a look at how your responsibilities may change in your dealings with other departments in your company.

In times past your dealings with the commercial, accounting, and plant (and engineering) departments have been quite clear cut. There was not much overlapping in types of work. Each knew his own area. Now our business is more complex. Many of the lines separating departmental functions have broadened.

Enter Mark-Sensing

For example, it used to be that toll tickets were rated by the traffic department in many companies. Along came mark-sensing. With it the rating chore passed from traffic into accounting (unless it had indeed already been moved).

The very act of going to mark-sensing of toll tickets has required much closer working between traffic and accounting. And, here, I pose to you a question—those of you who are now mark-sensing. Did it go smooth as silk? Or did you fully remember that there were others who would be affected and fully scoop them in on what you were up to? How about plant or engineering? Did you give them enough warning so they could get the new ticket pockets installed in plenty of time? Did you fully alert the commercial department as to "What's up, Doc?" so they could make necessary plans?

And will there be more of this close planning required up ahead? Definitely! Obviously, this will be a two-way street. You have the right to expect other departments to be alert in providing you information as well. As the business becomes increasingly complex and varied, so will the lines separating departments become increasingly vague.

Whose responsibility is it, for example, to initiate the use of a "QZ Plan"? (For the benefit of some plant man who's wandered in the wrong door, the "QZ Plan" is a scheme which gives fictitious billing numbers to meet the needs of a subscriber.) The commercial department is interested from a marketing standpoint. The traffic department develops procedures. The accounting department must be consulted. If operation of DDD equipment is involved, either the plant or engineering department may need to answer questions as to technical problems.

Consider Over-all Operation

Pretty obviously, the entire organization is involved. Traffic people will find it increasingly important to take other departments into their confidence early in their contemplations of a new scheme or operation.

I think you traffic people can expect to get deeper and deeper into more phases of the over-all operation. For example, you are bound to become more concerned as centralization of operating efforts progresses. Your problems of giving efficient and accurate Information services will be increased.

Before Podunk was converted to dial, you had no problem with Information—the operator in Podunk had it all in her head.

Then Podunk went dial. It still wasn't so bad, for Podunk Information was handled by its toll center only 10 miles distant. But now DDD has come along (or will), and area-wide directories are within sight. Now you are faced with the prospect of giving Information service for towns twice removed. How can the crazy commercial people expect you to give out the

(Continued on page 140)

Report of USITA REA Borrowers Committee

By W. G. WINTERS, chairman

SINCE OUR meeting here last year, your committee has continued actively to pursue matters affecting REA borrowers and actively to promote the progress of the REA program common to all borrowers, whether members of USITA or not, and regardless of type of organization, that is, whether commercial, mutual, or cooperative. All types of organization in the telephone field receive the benefit of the endeavors of our national association.

You have been advised by our Washington office through the association's media from time to time of legislative matters affecting our industry. Fortunately, so far, no national legislation inimical to REA borrowers has been passed except that affecting the entire industry, such as the increase under the Social Security Act, the increase in the minimum wage, and the partial loss of the 750-station exchange exemption which heretofore has applied to all telephone companies. Had it not been for the effort of our association, coupled with that of other industries, at least two of these matters could possibly have been more drastic.

Adequate appropriations have been made by Congress for the continuation of the REA telephone program for this fiscal year and, while the appropriation was not as large as advocated by some, it is the opinion of this committee that the appropriation made represented all that the REA could prudently administer in this fiscal year. The commercial REA borrower companies again this year, through the Roberts Committee, composed of REA borrowers, appeared before congressional appropriations committees with the necessary data in support of the appropriation, and there was appropriated $132,500,000, plus a contingency, if needed, of $30,000,000.

From the very date of the passage of the amendment of the REA act to include telephone companies, your association has been actively interested in its proper use and the administration of the act to the end that rural America may be furnished modern and wide area telephone coverage.

Worked with REA

Following the passage of the amendment, members of our association were designated to work with the REA administration in getting the necessary regulations, instructions, and personnel required under such a gigantic undertaking by an agency of the government wholly unacquainted with the problems to be faced. William C. Henry, Frank Barnes, and others of our association, gave unstintingly of their time to aid in getting the program under way in an orderly and progressive manner. Several of our REA borrowers and non-borrower members, along with cooperative company heads, were for years on the REA administrator's Advisory Committee as a voluntary aid to the REA telephone program. Our association and your REA Borrowers Committee have constantly urged that it is the responsibility of the Independent telephone companies of the nation to furnish modern telephone service and wide area coverage to our rural people, because the Independent segment of the telephone industry occupies such a predominant position in the land area of the rural United States. Our association has constantly urged use of the REA agency to finance such modernization and expansion where necessary.

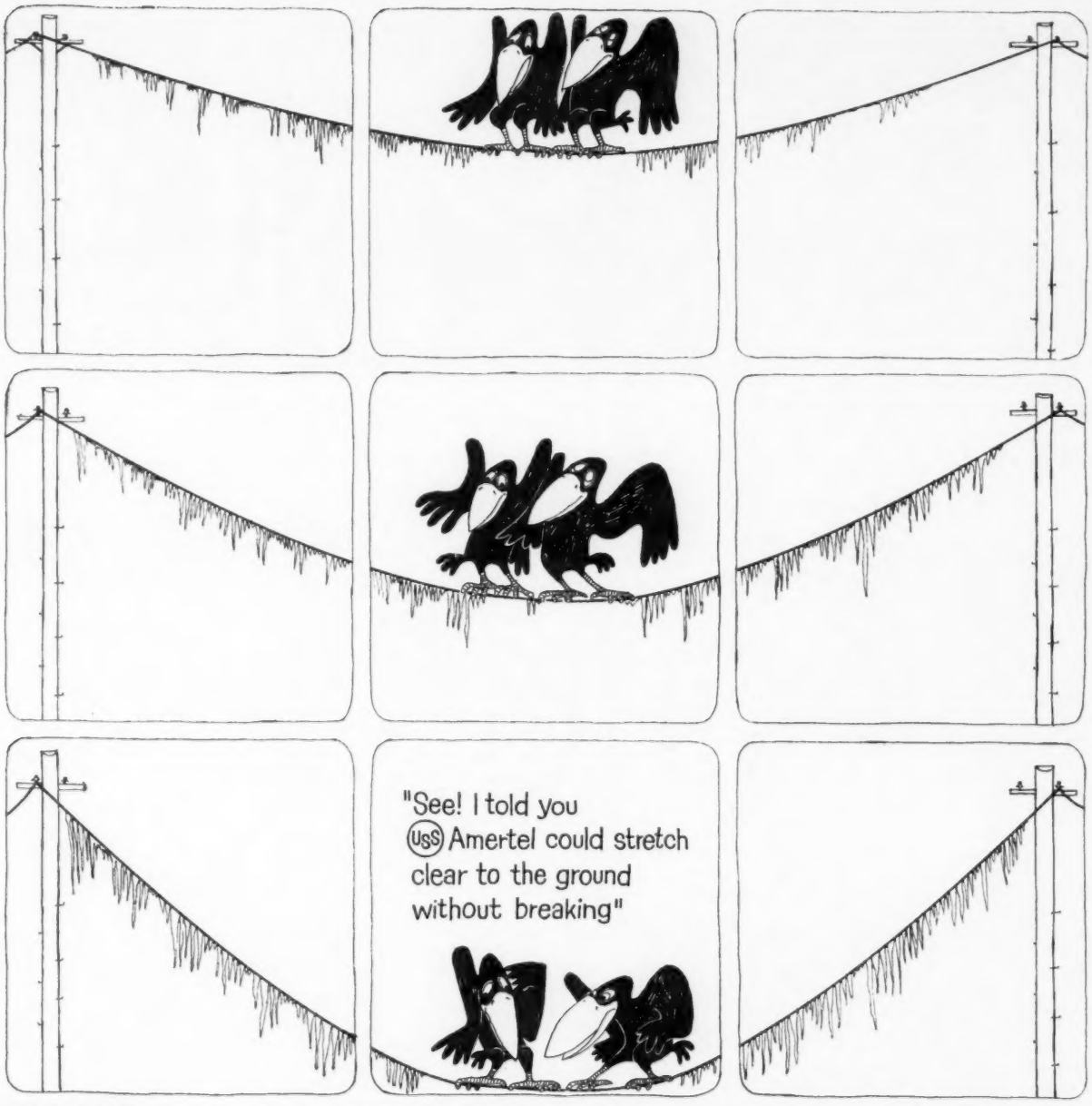
Our association is the only organization which has dealt and can deal successfully with the Bell System on toll settlements, an activity which benefits all types of telephone organizations, commercial, mutual, cooperative, etc. Such increases in compensation have benefited REA borrowers of all types.

Since the change in the administration on the first of the year, your committee has received many expressions from REA borrowers voicing concern over the public utterances, news articles and circulars that have originated as a result of this change in administration—concern over the tone and trend which such media indicate. Many REA borrowers sense in these expressions and writings a tendency to ignore the important part which the commercial companies have played in the progress made in the past, and which they must play in the future, in accomplishing what the Congress intended under the act, that of getting modern telephone service and as wide area coverage as possible to our rural areas.

Watchfulness Warranted

There is a pronounced impression among commercial REA borrowers that erroneous information has been given and questionable charges have been made to the new administration which are prejudicial to commercial borrowers as distinguished from the so-called non-profit borrowers, forces which advocate amending the REA act to the extent of making separate appropriations for cooperative organizations and discriminating in favor of such so-called non-profit companies. Such would be a radical departure from the unbiased manner of the administration of the act in the past. Some of the speeches made in Congress and put into the *Congressional Record*, as well as published articles, give ample ground for the grave concern and warrant watchfulness on the part of our association to see that discrimination as between types of organizations should not be allowed to occur.

Our association in its membership makes no distinction between types of organization. We have on our board of directors the head of a cooperative, Harold Ebaugh; and on this committee there are two representatives of cooperatives, Harold Ebaugh and D. B. Corman, both capable, experienced, men who are held in high esteem throughout the telephone industry.



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We brought to your attention last year the fact that there are elements of our society inimical to the participation of the commercial companies in the REA program. These elements continue to make charges unfairly reflecting on the commercial companies, as well as endeavoring to secure changes in the act. It is incumbent upon you as an REA borrower to keep in constant touch with your congressman and keep him advised of the progress being made in the program so that he may act intelligently against any improper changes in the act. The relation of commercial company loans to the so-called non-profit company loans has been and is being emphasized in a manner calculated to create the false impression that commercial companies have been favored over non-profit companies. Nothing could be further from the truth.

Left to right: Hugh Skidmore of Chicago; John Bolger of Syracuse, N. Y.; J. M. Zidlicky and T. J. Kroon, both of Northlake, Ill.

Reflection on Field Forces

The inference that the so-called non-profit field has been neglected in favor of the profit companies is an unwarranted reflection on the dedicated field forces of the REA organization which have diligently sought out the areas and the best agency to carry out the purpose of the act, whether it be a commercial company or a non-profit company. The emphasis which, in recent months, has been placed on the non-profit type of organization could be very confusing and frustrating to these dedicated field people who have, by and large, done a wonderful job in promoting the success of the rural telephone program thus far.

When the REA act was amended to include telephone companies, there were, at that time, some 5,000 or more Independent telephone companies operating and doing business as going concerns. The wonder is that the spread of borrowers is not greater than it is between commercial companies and non-profit companies. These several thousand commercial, going concerns had established territory and experienced personnel, whereas areas for non-profit concerns had to be searched out, companies organized, and territory defined before even a start could be made. Speeches, publications and other media which continue to emphasize non-profit organizations in a manner to ignore or reflect on profit organizations are a distinct detriment to the progress of the REA program.

While the total number of Independent telephone companies in the United States has shrunk from more than 5,000 to something like 3,300 in number at the present, there are approximately several hundred that are not yet modernized, and of these companies a very large number are potential REA borrowers if they are to provide modern service and wide area coverage in the areas they occupy. The force of public demand will bring about the modernization and expansion of coverage among these several hundred companies through either their individual action to accomplish the change-over, or they will be absorbed by other operating companies, an event which would further reduce the number of operating companies.

Factors Contributing to Shrinkage

A great deal of publicity and discussion has been generated to the effect that newcomers to the field of the telephone industry for speculation have been very active in the last few years. Compared to the total number of companies in business in the United States, the effect of such has been relatively small. The great shrinkage in the number of companies operating has not been due to newcomers in the field as result of the REA program. Many other factors have contributed to this shrinkage and far outweigh any effect which newcomers have had on this situation. A prime factor in this shrinkage during the past decade has been our own Federal Government in its policies which have fostered inflation. Another is the aging of scores of individual family owners with no heirs to carry on, coupled with the almost universal demand of the public for facilities embracing the latest development of science in the art of communication, which forced numbers of these individual operators and owners to seek large sums of money to modernize and expand, or consolidate with other companies to strengthen their position, or otherwise dispose of their properties to other operating companies long in the business, capable of modernizing and expanding the telephone service in the areas occupied by these companies.

The emphasis which has been placed on the desirability of creating as many non-profit companies as possible is definitely misleading to the general public because under the REA act there is no such thing as a non-profit company. All companies, regardless of type of organization, are expected to earn enough to repay the government loan. Also, we believe all telephone companies should pay their just share of federal taxes, the same as all other types of business.

We urge you to keep in touch with your congressman on the need for appropriations for the future, give him facts upon which to base his support of appropriations as we cannot expect the administrator to be the sole support for the request of funds. As your business grows and is growing, additional funds will be needed by all borrowers to meet expansion. Past experience of borrowers has proved this, and with the government holding a first mortgage on your property, as a general rule, you have no place to turn for funds except to the mortage holder. You should also bear in mind that the REA act was originated as a lending agency, an aid to private enterprise. It is incumbent on us borrowers to keep it a lending agency and avoid its becoming a management agency as well. Adequate, competent and expeienced personnel is necessary to maintain this position.

Pursuant to the direction of your association's board of directors, the officers of your association, Mr. Pearce, your president; Mr. Bailey, your executive vice president, and the members of this committee called upon the new adminstrator at the earliest opportunity following his appointment to advise him of the deep interest our association has always had in the successful promotion of the purpose expressed by the Congress in the telephone amendment to the REA act, and assure him of our desire to aid in every way to assure continued progress in bringing modern telephone service to our rural areas. We were graciously received by Mr. Clapp in the last week in April at which time there were also present Mr. Dell and Mr. Renshaw.

In closing we should remind you that even though the number of operating companies has been reduced heavily over the years, the number of telephones operated and controlled in the Independent industry has increased by the millions, a very significant number of which are the result of increased growth, expansion and modernization by you REA borrowers.

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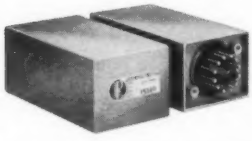
ALTEC plug-in repeaters are compact packages of gain (37 db) for voice frequency amplifier applications. Transistorized for appreciable power economy, cool operation, and long life, these units eliminate need for costly 130 v power supply.

ALTEC Model No.	DC Operating Voltage (volts)	Current Drain (ma)	Input/Output Impedances (ohms)
447B	20	50	600
449A	20	25	600 or 150
453B*	24-26	22	600
454A	48	25	600 or 150
455B*	48	22	600

*Center tapped input and output for DC Simplex operation

ALTEC PLUG-IN TRANSFORMERS



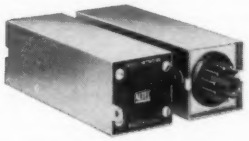
15189 HYBRID TRANSFORMER
Used in pairs to form hybrid circuit for two-wire to four-wire transitions in voice frequency telephone systems. Feature high degree of trans-hybrid loss. Impedances: Two-wire 600 ohms or 900 ohms, four-wire 600 ohms. Trans-hybrid Loss: 55 db 200-1000 cps, 52 db 2000 cps., 50 db 3000 cps. Maximum Operating Level: + 10 dbm. Current Capacity Signal Winding: 150 mas. Maximum Out of Balance Current Signal Winding: 150 mas. Dimensions: 3 7/16" H x 2" D x 1½" W.

15192 LINE TRANSFORMER — Impedance matching drop side to telephone line and enables by-pass signaling circuits to be derived at center of its line windings. Impedances: Drop — 600 ohms, Line — 600 ohms or 900 ohms with signaling facilities at center of windings. Without signal facilities with windings in parallel 150 ohms or 250 ohms. Frequency Response: ± 1 db 100-10,000 cps. Maximum Operating Level: + 20 dbm. Maximum Current in Line Windings: 100 mas. Maximum Out of Balance Current in Line Windings: 100 mas. Dimensions: 3 7/16" H x 2" D x 1½" W.

ALTEC 13530 COMPROMISE NETWORK

Used with ALTEC 15189 Hybrid Transformers to obtain compromise hybrid balance in two-wire to four-wire transitions at PBX locations.

ALTEC PRECISION NETWORKS



13531 NETWORK — Enables precise hybrid balance to be obtained against H88 type loaded cable circuits.
13532 NETWORK — Enables precise hybrid balance to be obtained against non-loaded cable circuits.

ALTEC S-17 AMPLIFIER SYSTEM

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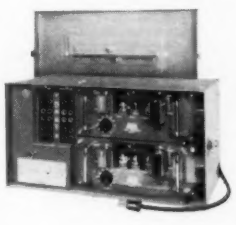
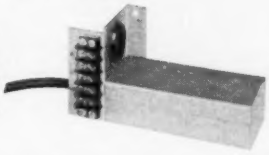


ALTEC 529A POWER SUPPLY

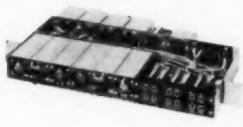
Energizes up to 100 ALTEC transistorized repeater amplifiers. External Power Available: 20 v DC @ 3 amps; 0.3 amp @ each of 10 separate outlets. Maximum Ripple Content is 0.002 v. Features DC voltmeter and rotary selector switch for checking each distribution outlet. Mounts in 19" relay rack and occupies 3½" of rack height.

ALTEC 533A POWER SUPPLY



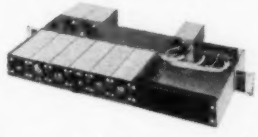
Mounts single ALTEC 449A or 453B repeater amplifier. Two of these power supplies with amplifiers may be installed in one standard apparatus box.

ALTEC 7300 TELEPHONE REPEATER TERMINATING UNIT



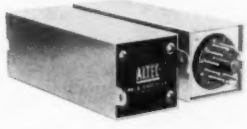
Provides rapid, simple means of establishing repeatered VF telephone channels for general telephone, telegraph, and teletype circuits, and PBX installations. Circuit components are ALTEC plug-in type which may be assembled for two-wire to four-wire termination, four-wire intermediate, and two-wire to two-wire systems. An insulated jack mounting block with 12 jacks permits routine system testing. Entire fully wired panel assembly mounts on standard 19" relay rack; occupies only 1¾" rack height.

ALTEC 7302 LOUDSPEAKING TELEPHONE SYSTEM



New fully transistorized system enables many talkers to participate on a telephone connection in inter-office conference calls when associated with 510 type telephone set or equivalent and a cardioid microphone and loudspeaker. System is complemented with ALTEC plug-in transformers, amplifiers, network, and associated equipment. Powered from central office or PBX quiet battery supply (24 v DC) or from regulated power supply.

ALTEC TRANSISTORIZED PLUG-IN AMPLIFIERS



460A TELEPHONE REPEATER, COMPRESSOR — Provides compression characteristic of 3 to 1 (db conversion factor) to enable sensibly constant speech level output to be maintained even when input signal levels vary widely. Especially important in the following voice frequency applications: toll conference grouping, loudspeaking telephone, party line, PBX tie line, and supervisory monitoring systems. Power Required: 25 ma @ 24 v DC.

461A POWER AMPLIFIER, CLASS B PUSH-PULL — Provides two watts output power to drive monitoring loudspeaker or a distribution network routing information to several locations. Input Impedance: 600 ohms nominal. Load Impedance: 8 ohms. Frequency Response: —1 db at 100 cps and 6000 cps relative to 1000 cps. Power Supply: 20-26 volts DC battery or rectified AC with total ripple contents below 2 mv and regulation better than 5% for a current change of 250 mas. Power Required: 250 mas for 2 watts output, 20 mas no input.

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A New Look In REA Loan Policies?

BY FRANCIS X. WELCH*

(An REA Conference Address)

I PURPOSELY put a question mark behind the title of my talk with you this afternoon because, frankly, I am not sure whether we really have, today, actually a new REA loan policy for rural telephone service or whether we have the same original basic policy, merely dyed a different color and brushed and polished up to fit in better with the prevailing political climate in Washington. Whatever the true situation may be, I think that all of us here will agree that the present REA rural telephone loan program poses a challenge for the telephone industry.

Now there is a good safe word—"challenge"! But lest you be too impressed by it, let me remind you of a little trade secret. Whenever we lawyers come across something puzzling, and we are not sure what it is, or maybe even what it is all about, we call it a "challenge." It sounds important anyway. Now, if I have not already completely confused you by this odd introduction, let me explain that, as a Washington observer, I have been looking at the REA for more than a quarter of a century. Yet, I cannot make up my mind exactly what it is trying to do, what it is supposed to do, or whether, in the absence of such basic standards, it is doing it well or not. It started out in 1935 as an emergency relief measure. Then there was a short period of overtures for co-operation with the private electric utilities. Then a pattern of electric loans almost exclusively with cooperatives was set up.

Swing Back to Private Companies

With the telephone loan amendment in 1949, the policy swung back to private companies, so that now more than twice as many (543) loans have been made to commercial companies than to cooperatives. But now there is talk about reversing this trend in favor of more cooperative loans. As far as bringing service to the farmer, REA has chalked up a clear-cut record of success. Since it was established in 1935, the number of farms with electricity has risen from less than 12 per cent to more than 97 per cent. So, you might say that part of the job is practically finished.

And, since REA was given the authority in 1949 to make rural telephone loans, the number of farms with telephones has risen from less than 40 per cent to more than 65 per cent. And if we project the present rate of new farm connections against the declining number of farms, we might roughly estimate that within another 10 years, or about 1971, there will be telephone service for nine out of every 10 farms. So, that part of the REA job seems to be at least within shooting distance of accomplishment.

Of course, we must bear in mind that almost half of these electrified farms are being served by private companies or other agencies not financed by REA loans. And while I have no firm figure to support it, I would estimate that well over half the farms are being served by Bell companies and Independent companies not using REA financing. Nevertheless, REA is fully entitled to the credit not only of putting millions of farmers on the power lines and telephone lines, who otherwise would never have gotten there, but also of spurring the efforts of the non-borrowing utilities to get the job done. And that certainly is all to the good. Total investment has been over 5 billion dollars and the repayment has been excellent.

Politics Play Part

Now, if we were to use a narrow and single track standard that all REA was supposed to do was to bring power and telephone service to the farmer, you might arrive at the simple conclusion that REA has been most successful in working itself out of one job and is in a fair way of working itself out of another in 10 years. But you would be wrong. Government agencies, whether they are spending agencies or lending agencies, just do not work that way. Now, I could be a little cynical at this point and say that REA has also been most successful in something else; namely, politics. There is no doubt that REA has come to have a powerful vote appeal which cannot be overlooked by congressmen from rural districts regardless of party.

But fairness and honesty compel us to look for another explanation for the obvious fact that REA is here to stay—and that it is in the best interest of all, as businessmen, as taxpayers, and most of all as American citizens, to see that REA works well. Difficulty arises, however, first, in defining the ultimate objectives of REA and, secondly, in determining the best methods, the best tools with which to reach those objectives.

Let us agree, for the moment, at least, that REA does have a continuing responsibility not merely to see that every farm in the United States gets telephone and electric service, but that it gets ample service and continuously better service, and at the most reasonable rates compatible with such service. That very broad statement, alone, could contain a host of far-reaching implications, some of which have already been revealed in the rural electrification field. There REA is now concentrating on financing generating and transmission plant, as evidenced by the recent 60 million dollar loan to build a 200,000-kilowatt generating plant in Indiana. The implications are far reaching in your telephone field, with its constantly changing and improving telephone standards. REA has rightly insisted on dial service in its loan policy. Over half of the farm service is already dial. But telephone service might also be said to include toll. Will REA, after

*Mr. Welch is Editor of **Public Utilities Fortnightly**, Washington, D. C.

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all farms (within reason) have telephone service, then start to finance local area toll lines and, if so, through whom? This is something to think about.

Serve Non-Farm Customers

So far I have confined this comment to REA responsibility to the farm and to the farmer. But even that standard is not broad enough to encompass REA objectives in the future. In the electric field non-farm customers now use more REA-financed service than farmers—about 55 per cent. During the past two years, about three out of four new connections on REA lines were to non-farm customers. Quite recently, REA was authorized to make loans to small manufacturers for machinery used in rural area factories that employ rural or small town labor.

Understand, I am not saying that this trend is wrong, or that it is anybody's fault. On the contrary, it was probably inevitable. Paradoxically, as the number of farms continue to decrease from nearly seven million in 1935, to about 3.7 million today, we see city dwellers spilling out into the rural areas, and the corn fields being sub-divided for new suburbs. This raises a question—who was supposed to be benefited by REA? The farmers? Well, they have been benefited without a doubt, but now they are vanishing, sometimes from the very farm homes and buildings wired with REA money only a few years ago. And in their place in some areas, at least, we have a burgeoning suburbia—split-level ranch houses for two and three-car families. And thus REA, brought into existence to aid the starving farmers of the mid-thirties, now finds itself catering more and more to the station wagon trade.

This is not a paradox which is peculiar to REA. It is part of a general pattern in which the whole Department of Agriculture now finds itself. Its new Area Redevelopment Administration is helping depressed areas to open up new industries and improve community facilities. For the first time since it was established, the Farmers Home Administration is making loans to non-farmers, for non-farm housing in small towns. So, when we look ahead and try to see where REA is going or what it will be doing, or whom it will be serving, 10 years or more from now, we will certainly need a crystal ball. So much for ultimate objectives.

Left to right: W. G. Vance of Anaheim, Cal.; P. D. Shea of New York City; M. S. Burton of Tyler, Tex., and Carl Rosenvold of Minneapolis, Minn.

Cites Early Philosophy

Getting back now to the REA telephone program, we may be more rightly concerned with *how* REA is moving towards these objectives, than where it is going. So far, REA has followed a course quite different in making telephone loans than it used in its earlier electrification program. This difference was primarily due to the 1949 law which set up the telephone program. Yet, if we leave the two laws aside for a moment—electric and telephone—we find certain similarities of basic administration tendencies cropping up in the telephone program today as compared with those we witnessed over 25 years ago. At that time, the first REA administrator, Morris Llewellyn Cooke, was trying to get REA launched under an executive order—before he even had any law at all. The similarities are so striking that when I hear and read some of the speeches and articles about telephone loans today, I have the same feeling one has when he sees an old movie on a television program in 1961.

On July 27, 1935, the electric companies offered to launch a quarter of a billion dollar rural electrification program, absorbing all of the 100 million dollars which had been made available to REA. Administrator Cooke seemed so very pleased. Two months later he said to President Roosevelt that progress was being made and "praised the private industry for its marvelous response to the program."* Two months after that the whole thing blew up. Former REA Administrator Slattery in his 1940 book blamed it on the companies for refusing to meet Cooke's "reasonable terms." The companies blamed it on REA insistance on complete first mortgage requirements which they could not meet. Whatever the reason, the fact is that REA, to this day, has not made electric loans to private companies, except in an insignificant number of cases.

Left to right: J. R. Rowlen, G. A. Roony, both of Belleville, Kan., and Pedro Chaker of Buenos Aires, Argentina.

Favored Public Ownership

Shortly after that, Congress passed the first REA act, which still authorized REA to make such loans to private companies, but also provided a preference in favor of public ownership borrowers and cooperatives. Since that time the great portion of REA electric loans has been made to cooperatives. The number of electric cooperatives rose from less than 50 throughout the whole nation to almost a thousand today—literally created by REA financing. Only a small portion

*16 Public Utilities Fortnightly 601, October 24, 1935.

3

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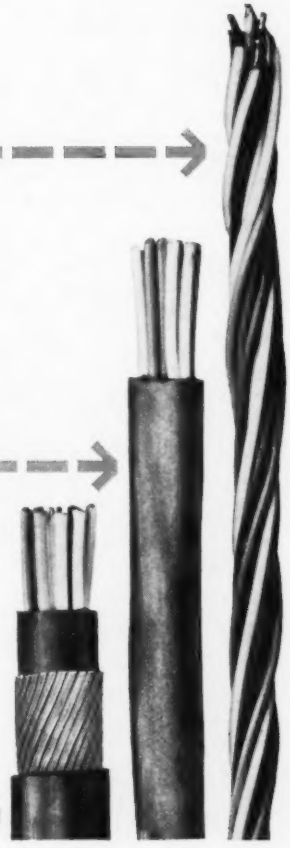

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of these loans have gone to the other preferred types of government agency borrowers, districts, municiples, etc. Now, clearly, within that four-month period when Administrator Cooke completely changed his mind about dealing with the private companies, the co-operatives became the preferred type of borrower for electric loans.

I do not suppose anybody can have any objection to a cooperative at the local farm level, because it is merely a group of farmers trying to do for themselves something which a commercial enterprise cannot do for them and make a reasonable profit. The simplest example I can think of is the milk can cooperative, where a number of farmers pool their milk can pickups by buying a truck and having one of their numbers drive the milk into the dairy. This came about quite naturally, mainly because a commercial trucker would not find such business worthwhile. And the milk farmers would find it even less profitable to do it for themselves individually. As a general principle, I do not think any businessman has any objection to farmers, or any other group, supplying themselves with non-profit services in these areas where private enterprise could not afford to serve.

Early Telephone Mutuals

But when we come to the telephone business and the electric business, where operations are on a scale that would attract commercial capital, then we find a certain amount of friction. One would not ordinarily think of these relatively complicated businesses as likely to attract cooperative enterprise in management on a broad scale. One would think that the average group of farmers were not equipped for it. And as a matter of fact, these utility enterprises did not attract cooperatives on a broad scale until REA appeared in the picture.

It is true that in the early years of this century, when telephone operations were relatively simple, a number of the so-called farmer mutual cooperatives developed. I saw one estimate that, around 1925, there were as many as 40,000 of these tiny mutual cooperatives. When the depression came along most of them folded up; some were taken over by commercial companies; and only a handful survived until REA got into the picture. In other words, the cooperative movement seemed *on the way out*, in the utility business at least, when REA—first in the electric field and later in the telephone field—reversed the trend by throwing the resources of the federal government behind these cooperatives.

Now we all know the objections that some commercial companies have to the cooperatives in this business. They have to do with income taxation, from which they are largely exempt; they have to do with regulation, from which they are largely exempt; and they have to do with subnormal interest rates on REA loans which must be looked upon as a form of subsidy by the taxpayer.

Left to right: George Goewey of Chicago; H. E. Purcell Jr. of Rising Sun, Ind., and W. J. Scheidler of Greensburg, Ind.

Congress at Fault

Whatever these objections, we cannot charge the federal REA with the responsibility, because it lies elsewhere. It is up to Congress and the state legislature to remove these inequities. But until they are removed, it is also a valid consideration for REA to consider the consequences of any policy in the telephone field of favoring the cooperative borrower along the lines followed in the rural electrification field.

What about these objections? Let us consider the matter of taxation. There can be no doubt that the tax-exempt status of cooperatives, and I am speaking of the broad cooperative movement, has been abused, and ought to be corrected because it is taking an unfair advantage of the other taxpayers. President Kennedy in his message to Congress earlier this year asked for some measure of federal income tax on cooperatives. But, for reasons I do not understand, he specifically asked that nothing be done about the REA cooperative tax advantage. The only reason I can think of is that REA has too much political sex appeal.

But this cooperative tax advantage is a serious drain on the Treasury, and is getting more so. It is not little local milk can stuff at all. A recent book on this subject, by the well-known economist Dr. Robert T. Patterson*, estimates that the federal Treasury is losing 150 million dollars a year through special exemptions granted cooperatives and co-op members who receive patronage dividend payments. State and local governments may be losing much more. Some of the biggest trade names in business today are co-op operators. Welch's grape juice (no relation), Land O'Lakes butter, Guild wines, Donald Duck concentrated frozen juices, Sun Maid raisins, Sunsweet prunes, and Sunkist oranges, and many others. Tax avoidance is the reason these cooperatives are in business in competition with commercial competitors and that is the *only* reason they are in business. Without the tax advantage they would not be here. They could not compete.

*"The Tax Exemption of Cooperatives," University Publishers, Inc., of New York.

Consideration for REA

So, there is an over-all danger to our tax-paying economy if this area of tax exemption is allowed to grow and expand. I am glad President Kennedy recognizes this, and I hope Congress will do something about this. But until it does, it is still a factor for REA to weigh in the granting of telephone loans.

I am not suggesting that REA turn down co-ops because they are co-ops. In some cases they are the only borrowers available. There are some good, fine cooperatives already in this field, and some of them are members of this association. But I do submit that in the case of rival applications, where all other things are equal, the REA might well take into consideration this loss to the Treasury which would result if the tax-exempt instead of a tax-paying borrower is put into business. After all, it is your money, it is my money, and every other taxpayers' money, that keeps this thing going.

As to regulation, here is another spot where commercial utilities feel that, as in the cases of taxes, the cooperative ought to play the game by the same rules as anybody else in the business. Of course, nobody likes to take medicine and it is only human that the cooperatives should try to get out from under the burden and have largely succeeded in doing so.

Congress Sets Interest

Finally, we have the objection about sub-normal interest rates. But, here again, we have something that Congress, not the REA, is responsible for. Former President Eisenhower thought that the 2 per cent interest rate placed too great a burden of subsidy on other taxpayers. Congress did not agree and President Kennedy seems to share that

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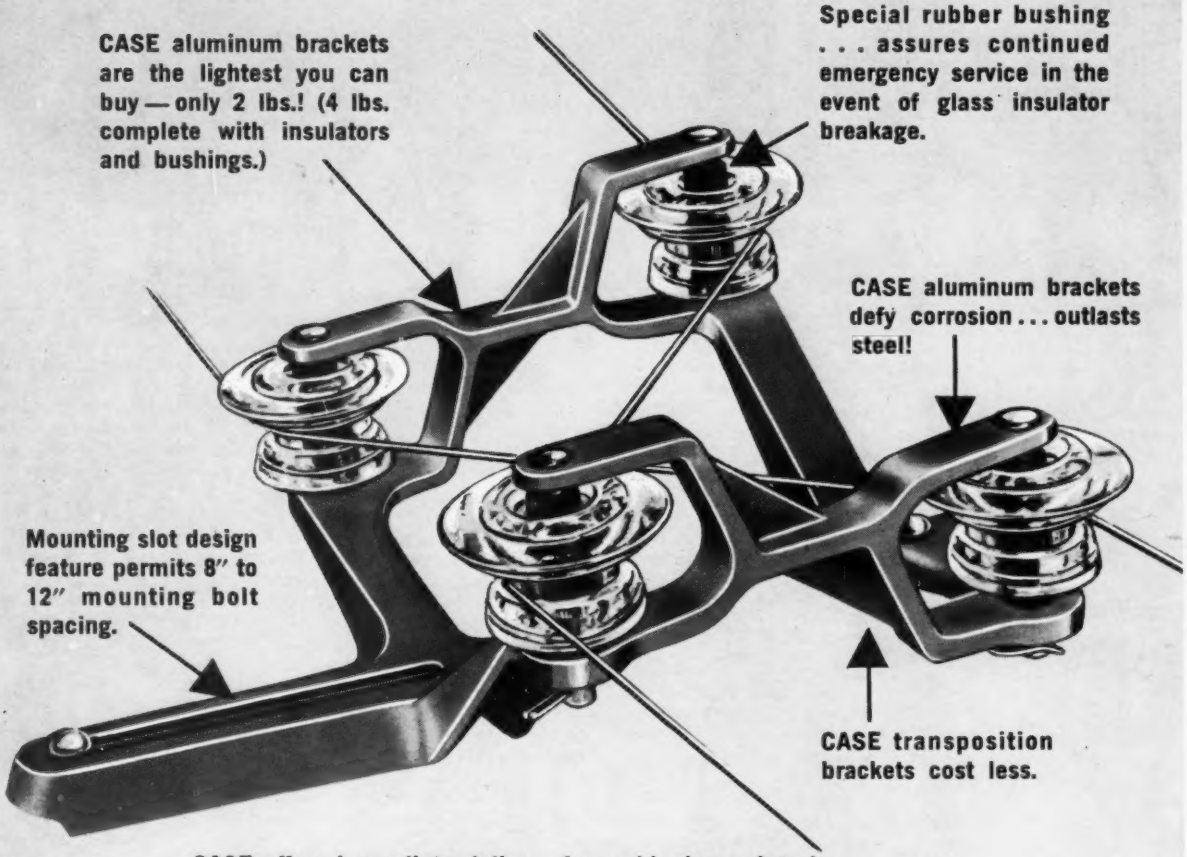

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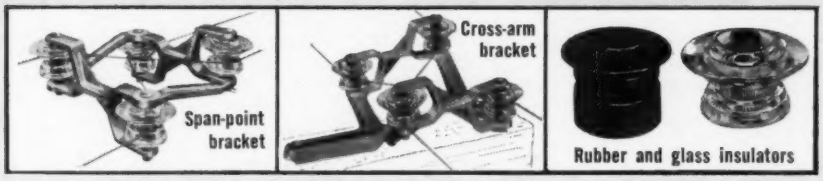

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view. So whatever the equities of the situation may be, as long as this cheap money rate prevails, we cannot expect any REA borrowers, whether commercial or cooperative, to turn their backs on such a bargain rate of interest. I know most of you in this room today feel that way about it or you would not be here.

The situation reminds me of a statement that was once attributed to that grand old senator from Virginia, the late Carter Glass, when Congress was debating tariff protection on tobacco products. The senator said: "I am a free-trade Democrat and always will be. I have always thought that the Republican tariff was an invention of the devil. But I can tell you that as long as we have to have it, by God I am going to see that the sovereign state of Virginia gets her fair share of it!"

I mentioned a few minutes ago that the REA act differs in the case of the telephone loans from those provisions which apply to electrification loans. As we have seen, the electrification law does provide a statutory preference for the cooperatives, among others. When Congress passed the telephone loan amendment in 1949, it turned the preference around the other way. It provided that for a period of one year the REA administrator should make the loans by preference to the operators of existing telephone facilities. This clearly implied a policy of preference for commercial telephone companies, because, by and large, they were the only ones in business, in most areas.

Congress for Private Companies

And this intent of Congress is borne out by the report of the House Committee on Agriculture, dated Mar. 9, 1949, recommending the telephone loan amendment, in which was said (page 11): "It is the hope and the expectation of the committee that most of the expansion and improvement of the rural telephone system provided for in this bill will be carried out by private industry within the framework of the private enterprise system."

Again I quote from the same page: "Every amendment adopted by the committee is an amendment designed to protect private industry and to assist existing telephone companies in doing the job that needs to be done."

Finally, I would like to quote the chairman of that committee, Rep. Harold D. Cooley of North Carolina, who stated a year later (*Public Utilities Fortnightly*, Aug. 17, 1950) that, "In creating the Rural Electrification Administration and in providing funds therefor, it was never contemplated by Congress that either the power and authority granted, or the funds made available, should be used to throttle, cripple, or control the efforts of private enterprise, or to duplicate the existing facilities in communities which are now being adequately served by private industry."

Left to right: Stephen Barry, Jacob Maciosek, both of Cable, Wis.; R. W. Bucek of Columbus, O., and G. J. Stover of Mt. Vernon, Wash.

We must realize, of course, that a new administration has taken over at the REA and at the Agriculture Department. We must assume that they are trying to do their best and if they make mistakes they are not intentional. One of the biggest mistakes it could make, however, would be to consider REA policies apart from the over-all problem which faces the Agriculture Department. REA faces the same built-in contradictions in administering these loan programs as the Agriculture Department in administering other forms of farm aid. It is the problem of increasing productivity and increasing surplus under pressure of federal benefits. It has plagued every Secretary of Agriculture since Arthur Hyde under Herbert Hoover.

Problem Not Solved Yet

A recent book* on the career of Claude R. Wickard, who was both Secretary of Agriculture under the late Franklin D. Roosevelt and REA Administrator under President Truman, shows this constant struggle which might be summed up in the title of the old song: "How are you going to keep them down on the farm?" Can anybody justify the over-all logic of the Interior Department spending millions to bring new acreage into production through reclamation projects, while the Agriculture Department spends millions to take existing acreage out of production?

Former Secretary of Agriculture Benson, under Eisenhower, certainly did not solve it. And the nine months' experience under present Agriculture Secretary Freeman is not reassuring when we consider that farmers this year are getting almost as much money for not producing corn as they are guaranteed for growing it.** Last winter Secretary Freeman said the program would cost from 400 to 500 million dollars. Now, it is apparent to all that it will cost at least 700 million dollars. The fact is the farmers are too smart for the Agriculture Department. They are producing more corn on less acreage and still the number of farms continues to decline. We hear suggestions that REA get into new and different programs, such as the recent proposal of Senator Carroll (D-Colo.) that it go into the salt seawater conversion program. Maybe that would be a good thing for REA to do. But, there again, it would mean bringing more acreage into production when we already have too much.

It is against the back drop of these built-in contradictions that the wisest and least risky course in administering the REA rural telephone program would clearly be to follow the sensible policy of continuing to make these loans to commercial companies, where all other things are equal. Under this policy, we have seen the number of farm telephones climb from less than 40 per cent to more than 65 per cent in one decade and with a good chance of finishing the job within another decade. What is wrong with that rate of progress?

Pressure for Co-ops

In that way the taxpayer stands to get some additional return because these commercial companies will pay their full share of taxes on income. I realize that a good deal of pressure is being brought from various sources to bear on the REA administration to change the format that was followed by Wickard, by Nelsen, and by Hamil, and to deal more or less exclusively with the cooperatives. I have even read articles in left-wing publications that this would make a good impression abroad, where cooperatives are an almost universal vehicle of business. This is supposed to help our image, in Af-

(Continued on page 140)

*"Roosevelt's Farmer," by Dean Albertson, Columbia University Press of New York.

**Under the present program farmers are receiving $1.00 a bushel for corn not planted and $1.20 a bushel guaranteed for corn produced.

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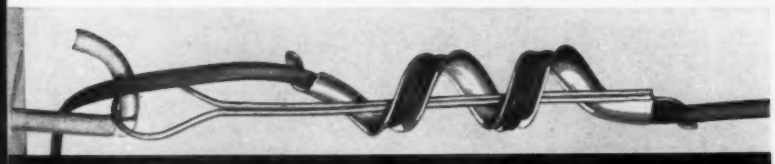

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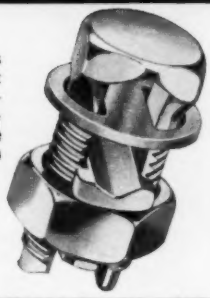

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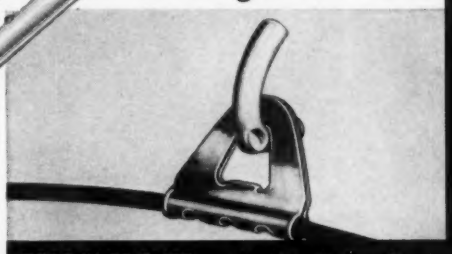
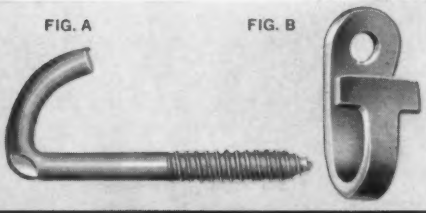


DROP WIRE CLIPS... stainless steel... for use with either parallel or twisted pair drop wire for intermediate fastenings on straight line drop extensions... are designed to grip tightly without damaging.



HOUSE AND POLE HOOKS: Fig. A is a standard house hook, ideal for hollow tile walls and similar construction. "B" is a drive hook which has wide application and is made in large and small sizes for pole and house use respectively.

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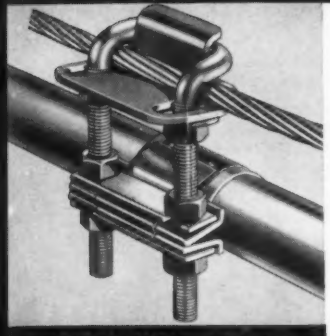

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The Frontiers of Rural Telephony

By NORMAN M. CLAPP*

(An REA Borrowers Conference Address)

WORKING TOGETHER is an art—an indispensible art in modern society—and an art that needs constant cultivation. It depends first of all on the full recognition of common objectives and interests. It depends also upon a willingness to recognize each other's special problems which must be considered in devising the methods for reaching those common goals. And, finally, it depends upon mutual recognition of each other's potential contributions to the common objective and an ungrudging willingness to give each and everyone full opportunity—and full credit—for his maximum contribution to the success of the joint venture.

In these critical days when every thoughtful American must be aware of the grim competitive struggle for world leadership and survival, in which we as a nation are inescapably involved, we must develop the art of working together more than we ever have before. We cannot afford to divide ourselves in petty squabbles. We cannot afford the luxury of doctrinaire arguments over mythical ideological concepts and issues which have very little similarity to the practical and specific issues which we face and are trying to solve. We cannot afford the waste of tearing one another down to serve the selfish purposes of our own intramural competitive rivalries.

In this current world struggle for an order of values in which human freedom and individual rights may be preserved and flourish, we face an adversary that can concentrate its national energies upon its immediate goals by sheer force and terror.

If we are to compete successfully, if we are to win this struggle for world leadership and the vital stakes involved, if our democratic way of life is to survive,—we must be able to concentrate our national energies even more effectively to build our strength and security through the art of working together.

Communications Vital

All this applies to us her today. Communications are vital to a strong America. The telephone industry is vital to a strong America. Modern, effective, complete rural telephony is vital not only to the safety, comfort, and convenience of the millions of people in our rural areas but also to the full economic development of the nation in all its parts and knitting it more closely together.

I am here today because you and I have a job to do—together. I am sure you invited me for the same reason. You in the commercial telephone industry and we in REA have been asked or directed—you have been asked, we have been directed—to do what we can to make modern telephone service available to the people in rural America.

When the Rural Electrification Act was amended by Congress in 1949 to provide a loan program for rural telephony, only 38 per cent of our farms had any telephone service. Today the percentage stands at 65 per cent, but only about half of these subscribers have what can be described as modern telephone service. So there is still much to be done.

When Congress broadened the REA program to include rural telephone service, Congress expected the advantages of low-cost government loans and technical assistance to be used to expand rural telephone service on an area coverage basis.

So here at this 64th annual convention of the United States Independent Telephone Association it is appropriate that we get together and consider our common objectives in this program. It is also appropriate that we appraise our past progress, clear the air of any misunderstandings and strengthen our common purpose for the work ahead.

As you know, the REA program was born in 1935 in an effort to bring electric service to rural areas, an effort which has succeeded in reaching 98 per cent of our nation's farms. When it started, only 10 per cent of our farms were hooked up to central station electric service. In this initial phase, the REA electrification program has been tremendously successful.

Its success in area coverage is one we hope and believe we can match in the newer REA telephone program as it gains time and momentum to grow.

Differences in Development

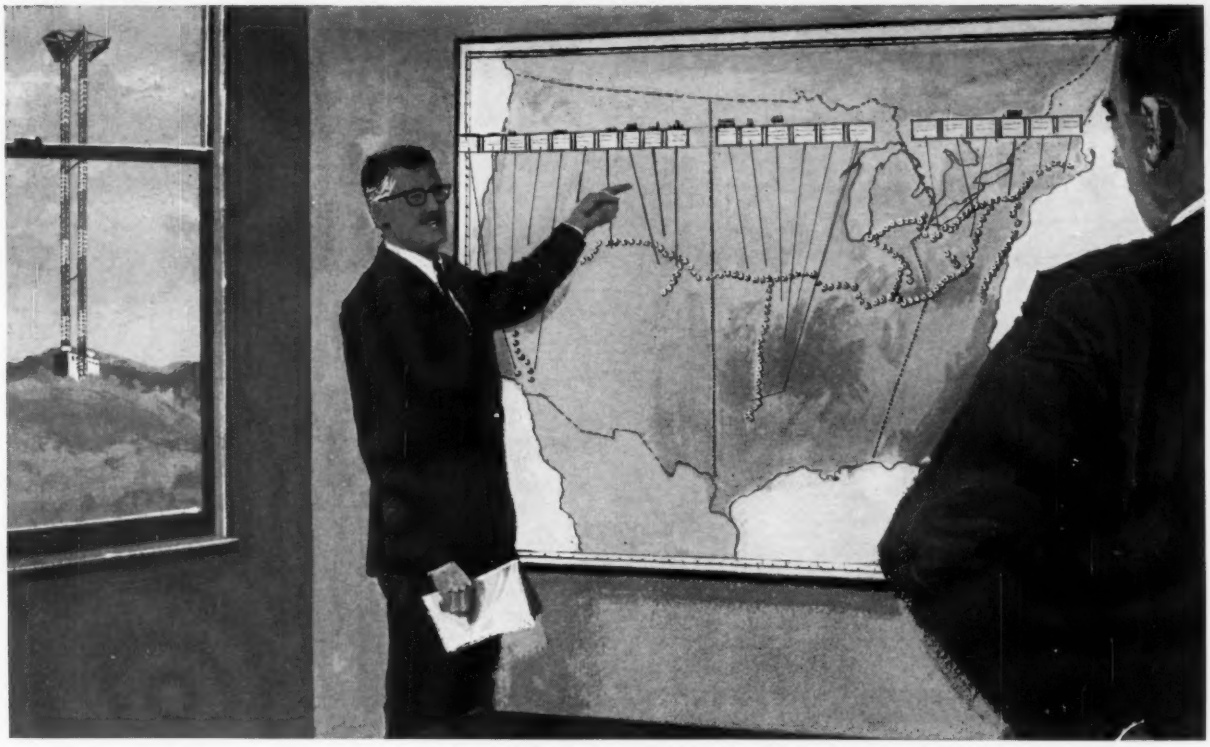
But although there is a similarity in the objectives of area coverage for both programs, there are important historical, as well as legal, differences in the development of the two programs which we must all recognize.

I am here today to talk with you about our common interests in the rural telephone program, but let me tell you very briefly an important and significant story that begins with the development of the REA electrification program. Perhaps this might be entitled "The Tale of Two Programs."

When the REA rural electrification program was launched back in 1953, it was assumed by many of its sponsors that the existing power companies would do the job with the help of the low-cost loan program made available through REA. The power companies were at the very outset of the program—and still are, eligible for REA loans when they will be used to bring electric service to the unserved rural people specified as the beneficiaries of the Act.

The first REA administrator, Morris Cooke, undertook extended, but fruit-

* Mr. Clapp Administrator of Rural Electrification Administration.



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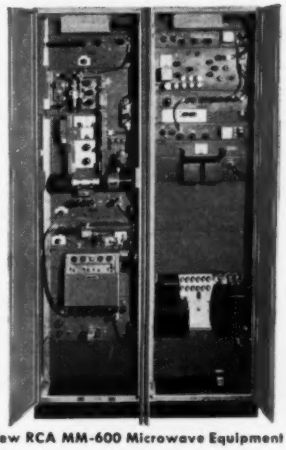

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less negotiations with the existing electric industry throughout the first year of his administration. He tried to work out with them a program by which they would expand their electric service on an area coverage basis in the rural areas with REA assistance. But they were not interested. They said they were already serving the farms where service was practical and feasible. They said it was out of the question to talk about building lines down roads where the customers only averaged three to the mile. They said such insanity would never pay out.

Missed Opportunity

So they passed their opportunity by. But the farmers, who wanted electricity, were not content to leave it at that. They got busy and organized their own cooperative systems, applied for REA loans, and provided their own electric service.

Today these cooperative systems alone serve about half of the farms of the nation. They average about three consumers to the mile. We have some borrowers with systems averaging only one meter to every two miles of line. Yet they are making it pay out. Out of 990 borrowers in the program at this time, only one is delinquent in its payments. Out of approximately four billion dollars loaned to all electric borrowers, this one delinquency amounts to only $81,000.

Now the power companies wish they had the systems and are trying hard to break back into the very same rural territories they passed by as unprofitable. And the people who took the early risks and built the systems that did the job quite naturally are resisting these second thoughts of the power companies and feel their own efforts, their own investments and their own business enterprises are properly entitled to protection. So do we at REA.

This is one part of the "Tale of Two Programs." The other is notably different in many important aspects.

The most significant difference is in the way the Independent telephone industry picked up the REA program with its offer of long-term, low-interest loans backed up with technical assistance.

Since 1949, when Congress amended the Rural Electrification Act to provide telephone loans a total of 543 Independent telephone companies applied for and received REA financing. Family-owned and investor-owned companies like yours make up close to three-quarters of REA's telephone borrowers. Out of a total of more than 821 million dollars in telephone loans approved, the commercial companies have 532 million dollars. In their loan contracts, these companies have undertaken to use this financing to improve and expand service to more than 1,140,000 subscribers, most of them in rural areas. This is modern dial service, at reasonable rates, which looks toward the objective of maximum area coverage.

The very first telephone loan which REA made went to a small Independent company in Alabama. The first REA-financed plant for the new rural service was put into use by a small Independent company in Virginia—and that same borrower made the first repayment due the government under the rural telephone loans program.

The most recent new borrower to get an REA telephone loan is a small Independent company in Kansas.

Invaluable Participation

Let's be frank about it. Let's be honest with each other. The participation of the commercial companies has been invaluable in bringing us all along the road toward better, wider area-coverage rural telephone service. It has been good for the REA program.

I think it can also be said by any frank, honest observer, who knew the industry 10 years ago and can compare its health today, that the REA program has been good for the industry, particularly the so-called Independent segment most of you represent.

But then there are those who will say that is all in the past. "What is going to be your attitude," someone

Left to right: Frank Ritchie, T. H. Sawyer, C. A. Burgess, all of Weaverville, N. C.; H. A. Bishop Jr. of Stark, Fla., and J. B. Lyford of Weaverville, N. C.

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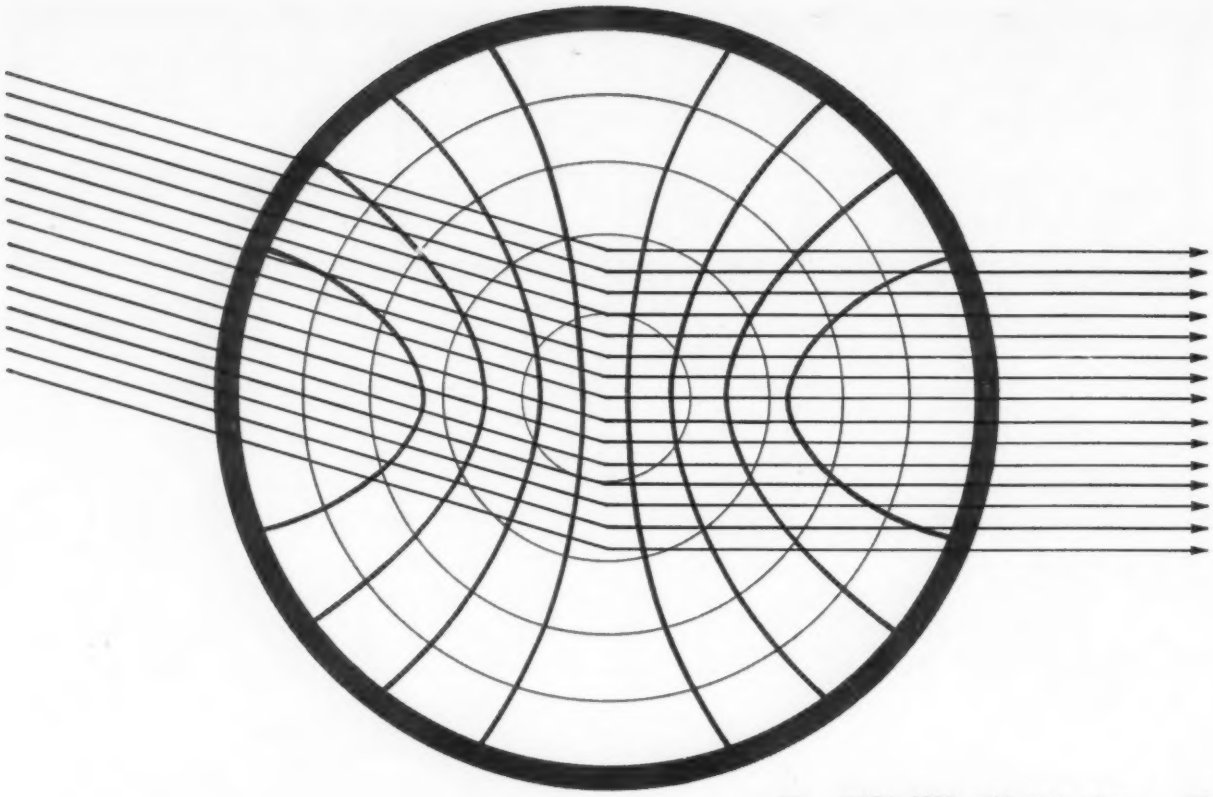

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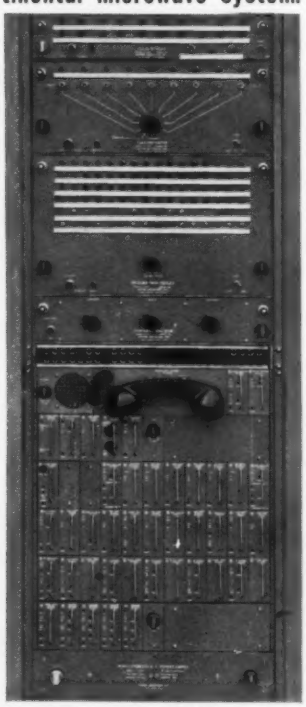


Typical master station used by Western Union on their MLD-4B Transcontinental Microwave System.

will ask, "toward the commercial companies in the future?"

Loan Record Reviewed

My answer is, "Look at the record."

Since Jan. 20, when the present administration assumed responsibility in Washington, REA has made 157 telephone loans, totaling 76.8 million. Of this total, 103 loans, amounting to more than 56.1 million dollars went to Independent telephone companies. Of 27 new borrowers during these eight months, 25 are commercial companies.

One of these new Independent borrowers, the Westco Telephone Co. of Weaverville, N. C., received one of the largest single loans in the history of the telephone programs—$6,198,000. But more than that, REA worked with Westco's parent company in establishing Westco for the specific purpose of making area coverage telephone service available to a large section of western North Carolina.

I have not quoted these facts and figures in any attempt to demonstrate favoritism for or against any group of borrowers. The bulk of the service terrritory in the small towns and rural areas of our country is already assigned by state regulatory bodies to Independent telephone companies. What I am pointing out is that the telephone industry, in contrast to the electric industry, is working with REA to provide better service to rural people. What I am emphasizing is that we are going to continue to count on you to carry a heavy share of the responsibility for putting telephones on the farms, in the rural homes, and in the commercial establishments scattered across the countryside.

Needs All Companies

The rural telephone program needs you and the other Independents. It needs the cooperation of the Bell companies, too, because much of the rural area adjacent to large urban centers is assigned to the Bell companies as their responsibility. And the program needs the non-profit, subscriber-owned cooperatives. They will have to play an increasingly important role in rural telephony as the program shifts its focus more and more to areas of lower population density, where the possibility of attractive profits thins out. The cooperative organization is an important and essential device for permitting people to provide their own telephone service where they find it necessary to do so and are willing to undertake the responsibility of doing it.

Our purpose and intent is clear. There is no need for theoretical debates in the corridors, or doctrinaire statements, about whether the new REA administrator favors cooperatives or whether he favors commercial companies. The REA administrator favors whoever is best able and willing—in each given situation—to improve and expand telephone service in rural areas on an area coverage basis with reasonable protection for the public interest. The real question for you then becomes: Are you willing and best able to do the job? If the answer is yes, then we are eager to sit down with you and help you work out a feasible proposal for REA financing and loan-supporting technical assistance.

And, although I regard it as pointless to dwell on whatever rivalries may exist between the cooperatives and the commercial companies, let me add just one further thought: In the last analysis the demand for cooperatives in this program will be largely determined by whether or not the commercial companies are willing to do a good job of area service.

This is already apparent in the contrasting history of REA rural electrification and REA rural telephony. It will continue to be true in the work ahead. If the commercial companies go on from here doing an effective job in making modern service available to all rural people with reasonable speed, at reasonable rates, and with due regard to their public service responsibilities, you need have no fear of your place in the program. But, if you fail to do the job, there are bound to be growing pressures on you, on REA, on the state regulatory bodies to let someone at it who will.

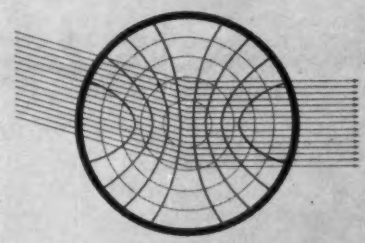
Study Telephone Program

So let us survey together the present frontiers of rural telephony. We started our survey at REA immediately after I become administrator this spring. We put together a fact-finding committee in REA to make a complete study and reappraisal of the telephone program, to see what progress as well as what mistakes we had made, and where we go from here.

I have already mentioned the progress we have made in rural area coverage. It is all the more notable because it came after two decades of backsliding in rural service during which obsolescence and abandonment of telephone plant exceeded new service in a great many areas.

But despite evidence of general progress, the 1959 census reported that in each of 462 counties there were still 500 to 1,000 farms without telephones. There were 233 counties with 1,000 to 2,000 farms without service, and there were 45 counties with more than 2,000 farms without telephone service.

In order to ascertain whether our borrowers were just paying lip service to the area coverage idea, or were really reaching for the people out beyond the base rate areas, our staff surveyed 180 borrowers in five states. We got an 81 per cent return on the questionnaires. The results of the survey make it clear that borrowers still have a very large job to do in their



MARC EQUIPMENT HAS BEEN PURCHASED BY THE FOLLOWING:

Western Union Telegraph Company
New York Bell Telephone Company
Hawaiian Telephone Company
Western Electric Company
Lenkurt Electric Company
Illinois Bell Telephone Company
General Telephone Company of Illinois
U. S. Air Force
Chicago and Northwestern Railroad
Atchison, Topeka, and Santa Fe Railroad
Collins Radio Company
United Telephone Company of Indiana
Raytheon Company
ITT — Kellogg
Union Oil Company
Sun Oil Company
Humble Oil Company
Edgerton, Germeshausen & Grier
American Machine and Foundry
Southern Pacific Company
Naval Ordnance Test Center
Aerojet General Corporation
David Taylor Model Basin, USN
Boeing Aircraft Company
Bristol Company
Radio Corporation of America
Frankford Arsenal, USA
Eglin Air Force Base, USAF
Computer Measurements Corporation

MARC systems purchased by the above companies operate in conjunction with standard microwave communications equipment such as that manufactured by the following:

Raytheon Company
Western Electric Company
Lenkurt Electric Company
Collins Radio Company
Motorola
Philco Corporation

service territories. Fifty-three percent of the total number of establishments outside the base rate area still do not have service.

The survey shows that almost two-thirds of the unserved establishments outside the base rate area are "adjacent" to existing facilities. These could be connected at a relatively small cost and their addition to the number served would result in substantial improvement in borrower revenues. About one-third of unserved rural establishments outside of base rate areas are reported beyond existing facilities.

You will be interested to learn that the study indicated a substantial difference in the willingness of cooperative and commercial borrowers to extend service beyond existing facilities without additional construction charges to the subscriber. The questionnaires reveal that REA-financed telephone cooperatives would be willing to extend service to about 92 per cent of the unserved establishments in their areas beyond present lines without additional construction charges. REA-financed commercial telephone companies reported they were willing to extend service under these conditions to about 45 per cent without additional construction charges.

Now this survey is only a sample. We tried to make it just as representative of the entire program as we knew how. It may or may not fairly state the general position of commercial companies. I cite it, however, to urge the need for some serious soul searching in the industry with respect ot its future intentions on area coverage.

Commercial Companies Future Role

I think, too, that you, in assessing the future role of the commercial companies—perhaps your own company—in the rural field of this industry should face up to a couple of other facts which our study revealed.

First, it is the cooperative organizations which have in fact moved in to serve the thinner rural areas. Statistics on subscriber density per mile of line best illustrate this. Our cooperative borrowers have an average of 2.55 subscribers per mile of line constructed. Our commercial borrowers average 5.05 subscribers per mile.

Left to right: Mel P. Brown of Pensacola, Fla.; Mrs. C. R. Jones, Mr. and Mrs. A. N. Mason and C. R. Jones, all of Tarboro, N. C., and Richard W. Waters of Washington, D. C.

Second, a study of a broad cross-section of our borrowers indicates that those which are cooperatively organized require total revenues averaging somewhere between 12.5 and 14.3 per cent of plant investment, compared with an average of somewhere between 16.6 and 19.4 per cent for commercial borrowers.

I mention these facts not to make any disparaging comparisons, but as food for thought in shaping our future efforts to finish the job we have undertaken.

Needs Cited

They point to the continued need for low-cost, long-term REA financing for constant improvement in management operations, the need for eliminating speculative practices where they exist, the need for further pioneering in system improvements and economies.

The more efficient your systems operate, the easier it will be for you to reach out and meet your area coverage responsibilities and still make a reasonable return on your investment.

In the field of operations, REA and its borrowers have pioneered the way to economies and improvements in a decade which has seen the whole character of the Independent industry change—from thousands of very small, obsolete, marginal operations, to a smaller number of consolidated, modern, successful enterprises.

From operating data, which borrowers report to REA, we prepare an analysis each year of how successfully REA financing is being used to improve and expand rural telephone service. We have just completed the compilation of borrowers' operations during 1960.

Reduction in Deficit Operations

To me, the most significant figures in this annual report are those which show a continuing reduction of deficit operations, a strong trend toward satisfactory margins. Of the 685 telephone borrowers reporting to REA on their 1960 operations, 182 showed deficits on an accrual basis. This compares with 224 deficit operations in 1959, and 255 in 1958. In terms of the percentage of REA telephone borrowers operating in the red, there was a drop from 44 per cent in 1958, to 35 per cent in 1959, to 26 per cent in 1960.

For all reporting borrowers across the nation, the median revenue received per subscriber—for local service, toll, and miscellaneous—is about $75 per year, or $6.50 per month. This is a marked increase over the 1959 revenue figure of $69 per year, or $5.75 per month. While expenses also went up, they did not go up as fast as revenues. The median operating margin climbed from $10.05 for 1959, to $12.66 for 1960. Median net income per subscriber jumped from $2.56 cents for 1959, to $4.28 for 1960.

I think the improvement is most important, when it is related to the challenge of area coverage which borrowers have undertaken. Improved margins offer borrowers the opportunity to push area coverage a little farther and a little faster.

REA has worked with you and with the manufacturers in many of the important developments in the design of rural telephone systems, and we will continue to do so. We think there are going to be more breakthroughs in technology and continuing improvements in operations and management techniques. REA encourages these advances and will help you take advantage of them as they become available and feasible for rural application. Any development that promises savings or

Left to right: Mr. and Mrs. Harlin Johnson of Toledo, Ia., and Mr. and Mrs. Jim Teslik of San Carlos, Cal.

better service is in line with the objectives of the rural telephone program which REA administers.

Great Strides Made

The telephone industry in general has made great strides in the past 11 years. Rural telephony in particular has made notable progress. We are moving toward the area-coverage objective of the program Congress set up when it expanded the Rural Electrification Act to include rural telephone service. There still remains much to be done for all of us.

To you who have already contributed to the progress of this program, I express the thanks of REA and the rural people you serve. To you who could but have not yet joined in this program, I extend a cordial but urgent invitation to help us accomplish our mutual task. From all, both in and out of the industry, I hope we will have understanding, support and cooperation.

After all, we are striving for a better life for the people in rural America—for a stronger, more secure America. The telephone industry is a vital link in this pattern of growth and strength. Your role, your contribution in that link is more important than you think.

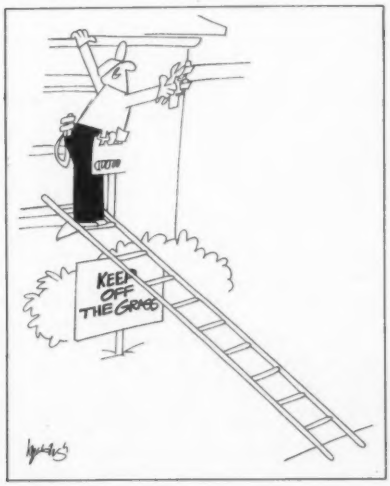
MARKETING SERVICES

Concluded from page 50

Now on the "how" of selling residence and farm markets:

- On each new connect or change of address contact, suggest to customers ways to improve their service with additional telephones, special equipment, extra listings in the directory, etc. Do this on other types of business office contacts, too.
- On plant premises visits, show bedroom and kitchen telephones in color and ask customers for their orders.

These efforts will take continued enthusiasm and interest by you and all your people, but they will pay off in better service for your customers, more services added for your customers and more revenues for your company at low cost.



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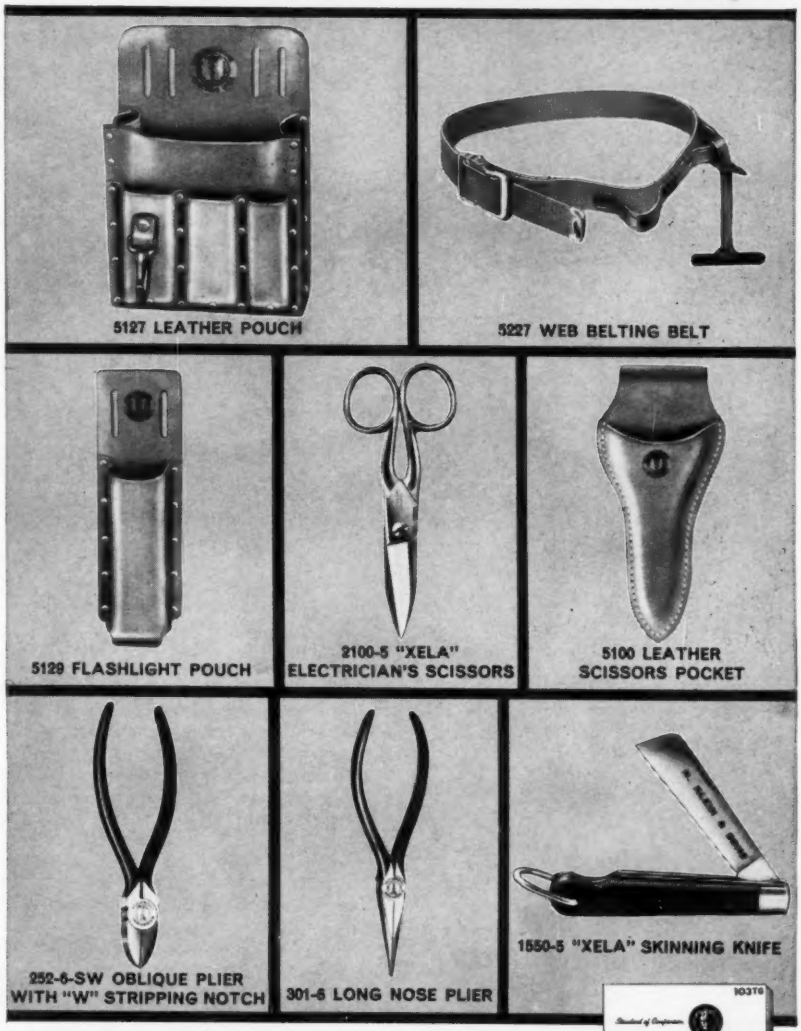
In leather goods, Klein has been supplying the largest utilities for years with tool belts, safety straps, tool pockets and other equipment designed for maximum safety . . . longest life.

Klein knives and scissors are specially designed for electricians and built to stand hard usage.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5227 WEB BELTING BELT
5129 FLASHLIGHT POUCH
2100-5 "XELA" ELECTRICIAN'S SCISSORS
5100 LEATHER SCISSORS POCKET
252-6-SW OBLIQUE PLIER WITH "W" STRIPPING NOTCH
301-6 LONG NOSE PLIER
1550-5 "XELA" SKINNING KNIFE

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EDUCATIONAL TV

Continued from page 61

program included the statement: "You have one of the most remarkable educational television programs in the country."

Let us now examine how this "closed circuit" approach to ETV will affect the Independent company, engineering-wise. The facilities selected to meet ETV requirements must be those that will be best fitted to it, both technically and economically. The systems supplied by other sources are designed community-by-community to meet specific needs.

To make a comparable service offering, the telephone industry ETV services must be stripped down to the essentials.

This calls for systems to be specially constructed for ETV similar to the manner in which customers might construct the facilities for themselves. In some instances, use may be made of portions of these ETV systems for other services. Where the economies are apparent, use may also be made of common plant for ETV.

As was stated earlier and as shown on the typical layout in Fig. 1, there are two means of transmission in the "closed circuit." These are microwave radio relay and repeatered coaxial cable. The microwave facility involves a frequency assignment from the Federal Communications Commission for each microwave transmitter required.

Only one transmitter and one receiver are required at each microwave repeater point, as transmission is only in one direction; however, each additional channel requires another transmitter and receiver.

Where the microwave facility terminates, and only a receiver is used, FCC authority is not required.

The picture in Figure 7 shows a microwave repeater installation with the ETV transmitter and receiver alongside a message system repeater. The two bays on the right contain the ETV transmitter and receiver. The other two bays contain the repeater equipment for the toll message circuit. Transmission considerations of the present equipment limit the light route microwave systems to about seven or eight repeater sections.

The other means of transmission is by coaxial cable. The cable used in the South Carolina network is the disk type, which provides an air dielectric between the center conductor and the outer tube. The center wire is held in place by polyethylene disks at three-quarter-inch intervals. The center wire and reinforced tube are enclosed in a polyethylene plastic sheath. An exploded view of this cable is shown by the picture in Figure 8.

In addition to being installed aerially, the cable may be placed in underground conduit or buried. When it is installed aerially, it should be placed on a separate strand in order to minimize the possibility of damage, as any dents, kinks or moisture in the cable will impair transmission.

The TV signal must be amplified in the cable approximately every 3,500 feet. A repeater is located at these points, and power is supplied by a commercial power tap.

The picture in Figure 9 shows the method of pole mounting the repeater. This repeater (one at each location) will repeat all channels sent over the cable.

Development is now underway on an amplifier which can be supplied with power from the central office. This will help reliability.

A composite cable is also under development which can be buried, or plowed in, and will contain the coaxial tube and physical pairs suitable for carrier. This will make possible the provision of loops and trunk circuits between points connected by the ETV cable. There is some possibility that a trunk carrier can be developed to operate in the coaxial at frequencies that will not interfere with the ETV signal.

The average investment required for a light route microwave channel between towers on an existing microwave system is approximately $12,000. For coaxial cable with pole line in place it is about $5,000 per mile.

The economy between microwave and cable varies with conditions; however, generally, the coaxial cable is more economical from 5 to 10 miles, even on one channel operation.

For multi-channel operation the distance increases, since an additional repeater (transmitter and receiver) is required at each microwave repeater point for each separate channel on the network.

In the cable only one repeater per repeater point is required for all channels. However, there are transmission considerations on the cable that limit its use to 50 repeaters or about 33 route miles. The cable system may be branched, as long as none of the receiving points exceed about 33 route miles from the originating location.

In closing, the following should be emphasized. Transmission of ETV by "closed circuit" has very marked advantages over "open circuit" in cost, flexibility, reliability, and frequency spectrum conservation. In "closed circuit" transmission, the communication companies have the know-how and experience to furnish this facility reliably and economically. These facts are not recognized by many people in and out of the communication business; hence the efforts to provide other ways of meeting this need. This trend must not be encouraged by our failure to provide either the information or the

facilities when there is the opportunity to do so.

ETV by "closed circuit", and the many other potentials this will open up for the use of closed circuit video transmission by our customers, should be looked upon as a great opportunity and challenge.

An opportunity to obtain the revenues to support better trained people and better plant to give better service. A *challenge* to show that our nationwide communication system, furnished by private communication companies, through constructive cooperation, can continue to give to this great country of ours the best communication service in the world.

Buried Cable

Continued from page 82

system. If, for any reason, water does enter such a system, the affected section will necessarily be confined between adjacent terminals and/or splice points.

If it is determined that a sheath defect exists in any section, the defect can be readily located by using the intermittent dc probe method with amplifier. . . . The shield is isolated from ground at each side of the sheath defect. An intermittent 540-volt dc current is impressed between the shield and ground at one end. This establishes a field from shield through the defect to ground and thence back to the battery through the ground. Two employes using probes about 10 feet apart explore the route of the cable. The two probe tips are connected through an amplifier to a galvonometer, both of which are carried by one of the employes. A field in one direction will be detected in increasing volume as the sheath defect is approached. Immediately over the sheath defect, the field will become zero and beyond it will reverse in direction. We have found that sheath defects with a leakage to ground of as low as 10 megohms can readily be detected by this method within an accuracy of about a foot.

Water Must be Expelled

As before stated, physical water in a buried PIC cable will usually affect only a very few pairs, thus making it possible, in most instances, to immediately restore defective services, if any, by cutting the loop to unaffected pairs. However, water should not be left in the cable indefinitely due to the electrolytic action brought about by standing potential on working pairs. This obviously means that the water must be expelled within a reasonable period of time. . . . Plugs are installed on each side of the wet section of the cable. Valves are then constructed just inside each of the plugs.

As much water as possible is first forced out using compressed nitrogen at about 20 pounds input pressure. The nitrogen, however, will not expel

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all the water. Accordingly, acetone is then injected under nitrogen pressure and exhausted at the valve at the far end of the section. After it is determined that the expelled acetone is essentially free of water (this can be determined by a simple test), nitrogen is used to expel and evaporate the remaining pure acetone.

This is practical as acetone is approximately 50 times as volatile as water and can be quite readily evaporated by the purging nitrogen. It is imperative, however, when using this method, to recognize that acetone is highly combustible and necessary steps must be taken to safely dispose of the exhausted acetone and prevent any possibility of ignition of the acetone vapors at either the input or output points in the cable section being purged.

One of the principal *potential* problems with underground distribution systems has to do with housekeeping in the terminal. I say potential because with proper craft training and administration, it has been definitely demonstrated that no problem will exist. However, if the craftsmen who conduct station installation and change work at these terminals are not meticulous, service and subsequent expense will suffer.

Conclusions

Again, let me state, as I did at the opening, that buried distribution systems and techniques are in their infancy, at least as compared with conventional aerial plant which has undergone refinement for over three-quarters of a century.

However, it is already apparent that, at least where conditions are favorable, buried distribution systems can be installed at a lesser first cost than comparable aerial systems and produce a link in the subscriber loop plant which is more trouble free and less costly to maintain than conventional aerial plant.

At the same time, it must be recognized that a better planning job and possibly more meticulous training and supervision is required in order to fully capitalize on the potential advantages of buried plant.

We can be reasonably sure that, as time goes on, the public will be increasingly insistent that all utility facilities in urban areas be placed underground. It well behooves us to become proficient before public pressure becomes insistent.

Buried urban construction introduces some problems today—but it has great potentials in both capital and expense dollar economy as well as improved service. It only remains for us to learn how to take full advantage of that potential.

FIRE TRAINING

Continued from page 86

is exposed to a temperature of 8,400 degrees Fahrenheit, it decomposes into its component elements—oxygen and hydrogen. The former supports combustion and the latter actually burns readily, given the right conditions. Nor does hydrogen have any odor, taste or any other factor by which it can be identified.

Thus I leave the result of fighting Thermite fires with water to your imagination. Nor, let us say, would it be different if it were calcium carbide —and believe it or not, on the record some have tried it.

Like water, supposedly fireproof buildings have a nasty habit of burning when they are not supposed to. I'd like to quote again from fire commissioner's report:

"Hardware company: (loss) $700,-238.

"Destruction of noncombustible building (steel framing, aluminum siding and roof) with noncombustible contents (hardware, plumbing supplies) probably seemed to be a remote possibility to the owners and may have accounted for their decision not to sprinkler the building. As it turned out, the combustible attic floor, along with stored papers there plus office furniture and combustible crates and cartons of stock provided adequate fuel to cause total destruction of the building.

"The fire originated when sparks from a welding torch being used on the roof fell on papers stored in the attic. The fire burned an estimated 30 minutes before employes on the first story discovered it. Public fire fighting was ineffective due to poor water supplies, the nearest hydrant being 2,000 feet away."

Must Recognize Hazards

In the past few years the "March of Science" has created upwards of 2,000 new, combustible products that didn't even exist as usable items of commerce a decade ago. All are potential fire hazards, particularly if you don't know about them—their properties and behaviour.

To sum up, recognition of fire hazards and in-plant fire prevention and fire fighting training are the keys to lower Industrial fire losses.

When you get back to your respective companies, if you do nothing else, I urge you to do this:

- Make a careful, thorough inspection to see if you can spot any fire hazards.
- Eliminate any that you find.
- Find out whether you have sufficient fire equipment, and, above all, whether what you have actually works.
- Find out whether your employes on all levels have sufficient training and know-how to deal effec-

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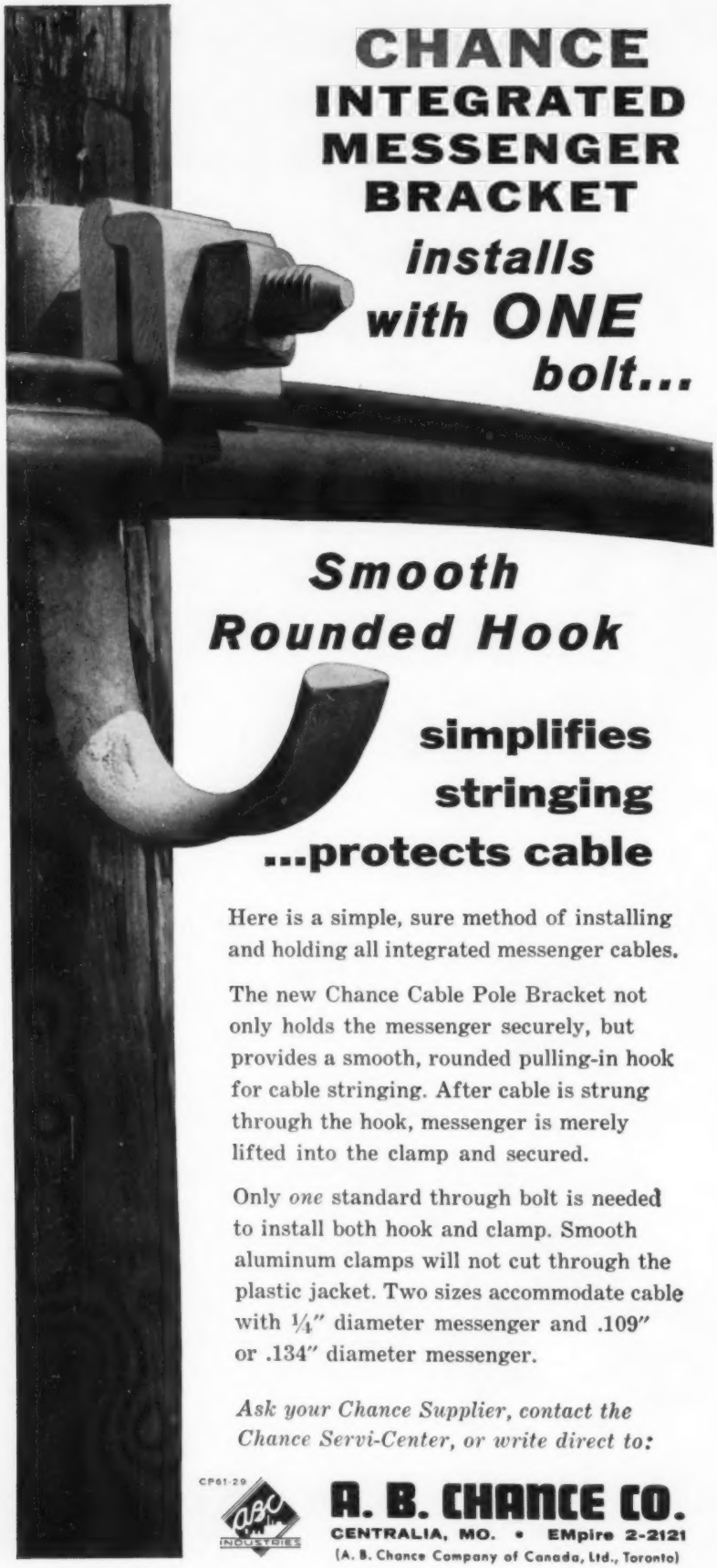

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tively and immediately with any fires that may occur while they're small.

- Satisfy yourself that both your employes and your fellows in management are fire prevention "oriented." Make an unannounced test—use a smoke grenade and time the reaction—thereafter analyze what was done and make the required changes.

If you haven't established a mutual-aid fire fighting agreement with neighbouring industries, work one out. This is particularly important in small communities with only volunteer or limited municipal fire fighting resources.

Don't look on plant visits by fire inspectors as the coming of the seven-year plague. On the contrary, make a point of inviting your local fire fighting authorities into the plant before disaster strikes. If they know the layout and your particular problems, they will be much more effective in dealing with any blaze that may occur.

I cannot impress on you too strongly that you can't take too many precautions and that you can't give your employes too much training. Ocean going vessels, by law, are required to hold a weekly fire and boat drill. Yet ships still burn!

This is in spite of the fact that they are floating in a sea of water and have much more fire fighting equipment built right into them than the average industrial plant.

Ambrose B. Kelly, general counsel of the Associated Factory Mutual Fire Insurance Companies, recenty summed up the fire loss problem very neatly. He said: " . . . experience in loss prevention indicates that the attitude of management is just as important as good construction and physical protection against loss. A reinforced concrete building fully protected by automatic sprinklers by having a management indifferent to loss, an attitude which is reflected in the attitudes of the employes, is not a good risk.

"Fire starts because of carelessness of employes or because of faulty maintenance, and when it comes there is no plant organization trained and ready to extinguish it promptly and with a minimum loss.

"Automatic sprinklers have proved their worth, but a single shut valve can destroy the effectiveness of the entire system.

"For effective loss prevention we must have both proper physical conditions and a proper management attitude. Given both . . . . losses can be substantially reduced."

And that, gentlemen, is expert opinion. It comes from an insurer who judges you as a fire risk, in dollars and cents.

As an industrial "on the job pre-emergency fire fighting and fire prevention trainer," I can only add one word: "*Amen.*"

SEPARATION STUDY

Concluded from page 107

ration study, you will have accumulated a vast amount of information regarding the traffic operations of your company. It would be unfortunate if we could not find some good use for this information in addition to developing traffic factors for separation purposes.

Usage studies can be effectively used for the purpose of traffic engineering to develop equipment requirements.

Unit studies can be used for administrative purposes to develop operator work loads and your company's cost per thousand traffic units. I would like to briefly mention an aspect of traffic administration which may have some effect on your separation studies. By reason of toll traffic being inter-connected with the Bell System, as well as other Independent companies, it is essential that operating procedures for toll traffic be uniform. We, therefore, receive the latest Bell System practices for operating toll traffic in the most efficient manner. The same does not apply to local traffic, such as information, dial assistance or intercept calls. If a review of the factors for local traffic shows that these are unusually high, an analysis should be made of practices used for handling this traffic. Any increase in the efficiency of handling these calls will not only decrease independent costs but will tend to increase the toll traffic factors as related to the total office.

The message-minute-mile study will provide you with a thorough knowledge of your toll circuit plant and may well indicate that present traffic could be re-routed over other circuit groups more effectively. The line haul studies might also be used to furnish information for other purposes, such as the feasibility of Extended Area Service between certain exchanges.

In summarizing our discussion, I would like to emphasize the importance of the traffic portion of a separation study. The persons who are to make the traffic studies should fully understand the significance of their responsibility. They should be properly trained so the studies will produce accurate results. The observation period should be carefully selected so as to be representative of the annual study period. In the final analysis, we should certainly take advantage of our efforts by using the information for whatever purpose may prove valuable, whether it is engineering central office equipment and toll circuits, or to improve efficiency in the administrative end of the traffic department.

The Drive of a Goal

No man is worth his salt who is not ready at all times to risk his body. . . to risk his well-being. . . to risk his life. . . in a great cause.—THEODORE ROOSEVELT.

DRILLING PROBLEMS?

Call In Your KA-MO Man

Drilling is your Ka-Mo specialist's stock in trade. And his field experience, combined with the quality line of Ka-Mo drilling equipment, has enabled many a company to cut costs and to speed cable, conduit, and duct work . . . post hole drilling, too.

Your Ka-Mo specialist has a drill, feed, and cutting head for practically every drilling requirement. There are gasoline, air, hydraulic, and electric models to choose from for drilling holes from 2″ to 48″ in diameter and larger.

Why not have your Ka-Mo man call today.

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PLEASE SEND KA-MO LINE BROCHURE

NAME_____

COMPANY_____

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CITY_____ STATE_____

Florida Becomes 1st Southern State To Be 100 Per Cent Dial

SPECIAL CEREMONIES recently marked the conversion of Florida's last manual exchange, the Perry exchange of the Gulf Telephone Co., Perry, to dial operation, making Florida the fourth state in the nation, and the first in the South, to be 100 per cent dial operated. Perry serves over 2,300 stations.

The other three states which have 100 per cent dial service are Connecticut, Rhode Island and Delaware.

Presiding at the commemoration dinner with Florida Railroad & Public Utilities Commission Chairman Wilbur C. King.

Others attending included commissioners Jerry W. Carter and Edwin L. Mason; Florida Chamber of Commerce president Henry C. Coleman and representatives of the Florida telephone industry, as well as Perry area civic and business leaders.

Plaques in honor of the event and in recognition of their leadership and guidance were presented to the commissioners by John B. Renwick, General Telephone Co. of Florida vice president-controller, and president of the Florida Telephone Association.

In his speech at the cut-over, chairman King reminded his audience that in 1960 the Florida telephone industry, composed of 21 Independents and Southern Bell, installed its 2 millionth telephone.

Commenting on the telephone industry's role in the prosperity of Florida, he said that "Over 800 million dollars have been invested in the state by the industry . . . The telephone companies that are represented here. . . are spending some 93 million dollars this year to provide for more and better telephone service.

"The telephone industry is one of our largest taxpayers and these tax revenues have contributed greatly to the economic well being of our local, county and state governments."

Chairman King, in discussing the cost of telephone service, said that "Over the years the quality of telephone service has constantly improved, as has its value. It is worth far more today than it was in the past, and yet the cost, in general, has increased less than any other product or service you can buy today. Its value will continue to improve with the many advances that are coming in the future."

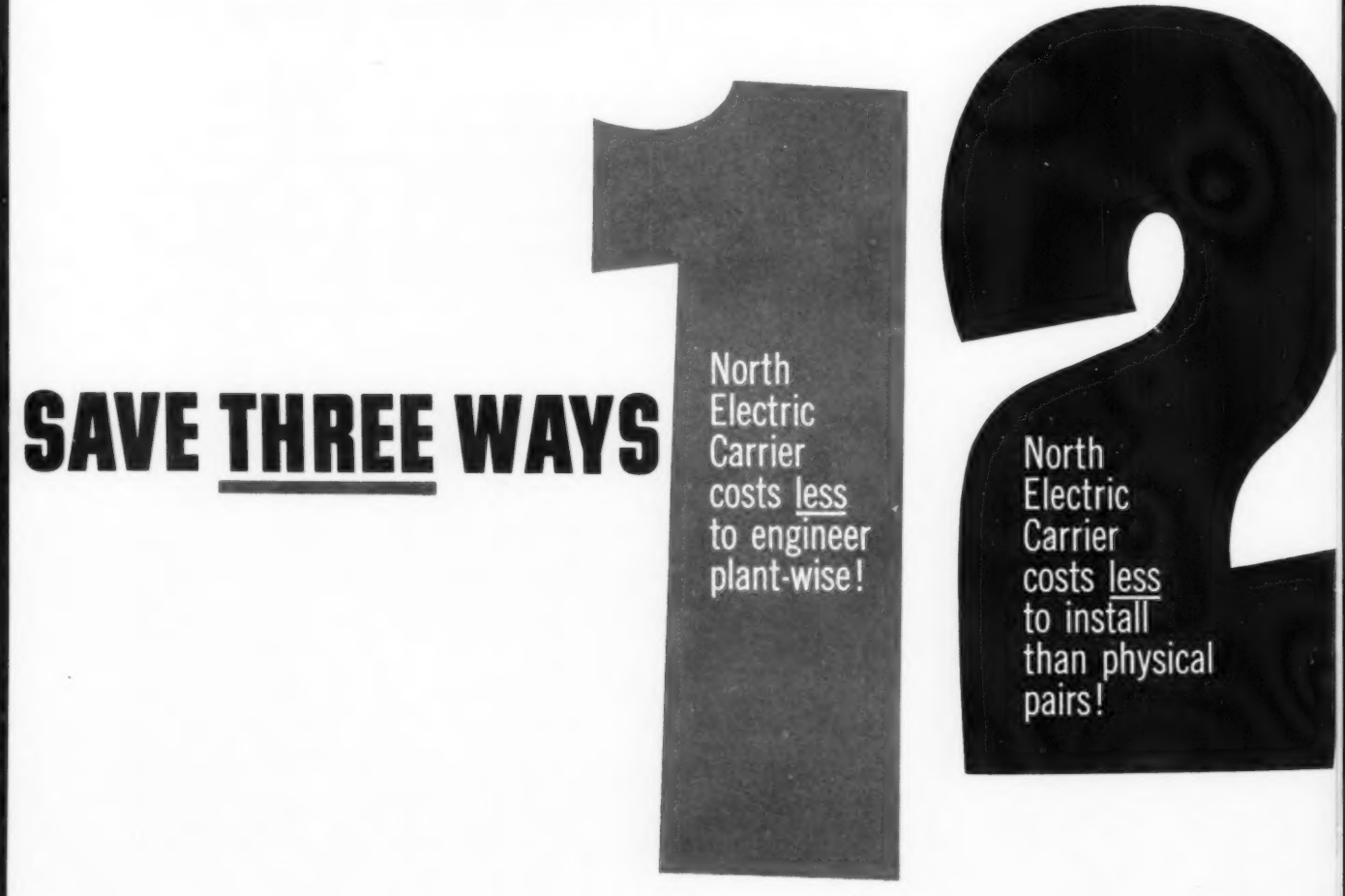
The commission has a challenge before it, he declared, in giving the industry the fair regulation it needs to meet the growing demands of the future. In this connection, he stated:

"We know that the industry must compete in the open market for capital. We know it will take fantastic sums of money and in order to acquire this money, the industry must be allowed to earn a fair rate of return for its huge investment. The financial center of our country in New York, serves as a sensitive barometer to the people who invest their money, and we know that it is here that the industry must get its money. Fair and just regulation, allowing a fair rate of return, will enable the Florida telephone industry to compete in this market for money. I assure you that your commission will do everything possible to aid in this competition."

He referred to the present and future as "the jet age of the industry, for research has certainly moved the industry forward with the speed of a jet."

Telephone research, he said, is responsible for nation-wide television's growth using microwave transmission and coaxial cable, as well as for the transistor and other improved electronics equipment.

This research has given the United States the finest telephone system in the world, he stated, and "this is a good example of what free enterprise


SAVE THREE WAYS
1
North Electric Carrier costs less to engineer plant-wise!
2
North Electric Carrier costs less to install than physical pairs!

can do, and American free enterprise, through research, is on the threshold of world-wide telephone communication through the development of space satellites."

He predicted that the solar battery, developed by telephone research, through its ability to convert sunlight into energy, will play an important part in space communications.

Chairman King agreed with the Federal Communications Commission's announcement that space communications should be carried out by free enterprise. He stated:

"It is proposed that all communications carriers such as the American Telephone & Telegraph Co., International Telephone & Telegraph Co., and others will jointly provide space communications with the commercial carriers of all countries in the world. We as regulatory people strongly endorse the position taken by the Federal Communications Commission. This is a field where free enterprise excels and we are sure that America will be first in communications in space."

He also pointed out in his talk that telephone research and the industry play a vital role in our country's defense. He mentioned SAGE installations and the fact that the command guidance systems of both the Titan intercontinental ballistic missile and the Nike defense missile were developed by telephone research.

In ending his speech, he stated: "Today, we in Florida dial all our local calls; tomorrow we will dial all our long distance calls; and the day after, perhaps we will dial the moon.

"This is a direct result of a well-informed telephone industry. It is a proper example of free enterprise in action. . ."

D. A. Schaefer, Illinois Independent, Dies

Daniel A. Schaefer, 47, president of the DeKalb-Ogle Telephone Co. of Sycamore, Ill., died Oct. 12, following a heart attack which occurred on Oct. 11. Mr. Schaefer had returned to Sycamore from attending the convention of the United States Independent Telephone Association in Chicago a few hours before he was stricken.

Mr. Schaefer was born in Freelandville, Ind., where he received his early education. He was a graduate of Purdue University with a bachelor of science degree in electrical engineering and later attended the business and law schools at Indiana University.

He started with the DeKalb-Ogle company in March 1953 as assistant general manager. He was promoted to general manager in February 1956, and vice president in June 1960. He was elected president and a director on Feb. 14, 1961.

Prior to joining the DeKalb-Ogle Telephone Co., he was with R. W. Beck & Associates, consulting engineers of Seattle, Wash. He was also with the Indiana Bell Telephone Co. in the traffic and general engineering department prior to and after World War II.

As a lieutenant colonel, U. S. Army, he commanded the 424th Field Artillery in Korea and the 304th Field Artillery during World War II.

Mr. Schaefer was president of the Illinois Telephone Association and chairman of the Civil Defense Program in Sycamore.

Survivors include his widow, Dorothy, and two daughters, Sandy, 18 and Sally, 12.

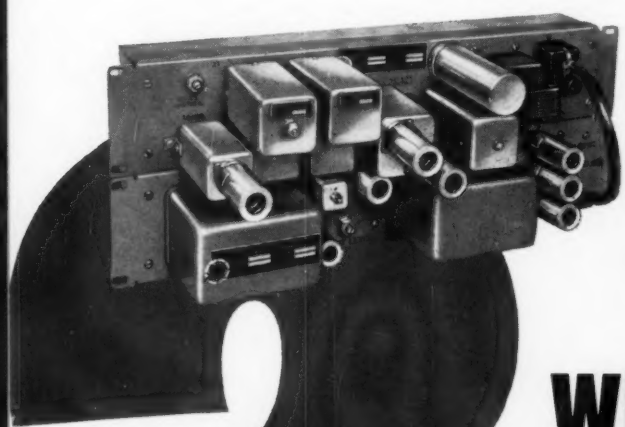
Memorial gifts may be made to the Daniel Schaefer Scholarship Fund of the Sycamore Rotary Club.

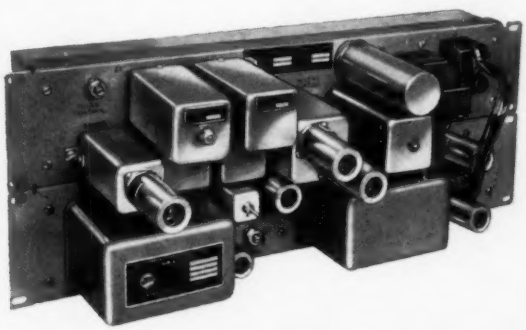
Captured Thoughts

"A man would do well to carry a pencil in his pocket, and write down the thoughts of the moment. Those that come unsought for are commonly the most valuable, and should be secured, because they seldom return."—BACON.

Owned and Loved

"The more help a man has in his garden, the less it belongs to him."—WILLIAM H. DAVIS.





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3 North Electric Carrier costs less to maintain than line wire!

THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

NORTH ELECTRIC COMPANY

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NORTH

Spiegel's Electrowriter® System saves one to three days on orders

Central Packing clerk at Spiegel, Inc. in Chicago writes stock-check order directly on Electrowriter Transmitter to...

...warehouse located sixteen city blocks away. Here, message is instantaneously recorded in writing on the Electrowriter Receiver. Stock clerk takes message, checks bins, writes back to Central Packing using the Electrowriter System.

Central Packing at Spiegel, Inc., Chicago, home of the Spiegel Catalog, processes over 6,000 mail orders every hour. A few incomplete orders can tie up space on the packing floor and cause delays for customers.

To verify open stock on missing items used to take up to five hours by house mail, often holding up shipment of an order until the next day or over a weekend. Now, with an Electrowriter System Central Packing keeps constant tab on open stock in three remote warehouses and verifies missing items in *less than 30 minutes.*

Achievement? Spiegel has maximized order handling, avoided congestion on the packing floor, and saved valuable manhours with its Electrowriter Communications System. Orders can not be lost or misplaced. A permanent, written record is obtained of every stock verification. And Quality Control personnel can check the disposition of any order at any time.

NOW..."Write By Telephone"

You can "Write By Telephone" over regular dial networks* or private lines for alternate written message and voice service. Find out how your company can increase its efficiency and cut costs with Electrowriter Communication Systems. Send for complete information.

*Electrowriter instruments are accepted for use over local and long distance facilities of the Bell System, General Telephone System, and independent telephone companies.

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Comptometer Corporation, 5600 Jarvis Avenue • Chicago 48, Ill.

VIEWS TRAFFIC DEPT.

Concluded from page 111

correct dope when the stupid plant people don't promptly give you the information on worked orders?

Though this may not be an exciting example, it suggests that you be attentive to changes that loom on the horizon. Advances in the art are guaranteed to compound some of your problems. It will be worth quite a lot or your time to anticipate them and instigate corrective action in either your own or other departments before it affects service.

Now you have learned that I believe you traffic people are a vital part of a vibrant industry.

In the days ahead you must continually revamp your operating procedures to fit the changing picture.

You must be sensitive to the effects of new services offered to the public.

You must review, and change as required, your old stand-by, day-to-day, unexciting chores.

You must readjust and augment your dealings with other departments in the company to make for best team effort.

And, as you do these things, you will have indeed met well your changing responsibilities in the Soaring Sixties and Sane Seventies!

REA NEW LOOK?

Concluded from page 122

rica or Scandinavia, or other places where old-fashioned business for profit has become some kind of a dirty word.

I can tell you this much. If this administration, or any other administration, sets out on a course of disturbing our basic private enterprise pattern, one which has brought forth on this continent the greatest and most satisfactory telephone service in all the world, they will have something serious to answer for.

When we compare private company telephone service in the United States, which contains only a tiny fraction of the land area and population of the world, and yet is served by 56 per cent of the entire world's telephones—when we compare that with the record of government telephone monopolies abroad, or any other basis of comparison, I say we have got here in the United States the best that there is. And I say that any deliberate effort to change this would surely be monkeying with the buzz saw.

I say that it is the duty of the telephone companies functioning through this excellent United States Independent Telephone Association to see that this private enterprise system is maintained, and to make the appropriate representations to Congress, if necessary, if any attempts are made, however well intended, to change or wreck this winning combination—the American telephone industry.

AE International Contractor for Panama Telephone System

Nearing completion in the Republic of Panama is the "backbone" of a modern nationwide telephone and telegraph system being built by a team of General Telephone & Electronics subsidiaries under the direction of Automatic Electric International, Inc., the prime contractor.

The system will be owned and operated, under franchise from the government of Panama, by Empresas Electricas de Chiriqui, which provides telephone and electric light and power service for Chiriqui province, one of the richest and best developed areas in Panama.

The 3-million-dollar project calls for long distance and local telephone networks along with equipment to interconnect the new system with existing exchanges, providing direct distance dialing (DDD) throughout the system.

Automatic Electric Co. will supply the automatic telephone exchange equipment; Lenkurt Electric Co. will install long-distance transmission equipment; and Automatique Electrique of Antwerp, Belgium, will furnish the telephone instruments.

The system will bring telephone service initially to more than 2,000 new subscribers. It will interconnect with approximately 20,000 existing telephones in cities of the Republic, and with the systems of the Panama Canal Co. and the U.S. Armed Forces in Panama Canal Zone.

It also will connect with facilities of the Tropical Radio Co., which operates the international telephone service to the United States, Central and South America.

The new system is being completed in three phases, with the first scheduled for service Nov. 3, Panama's Independence Day.

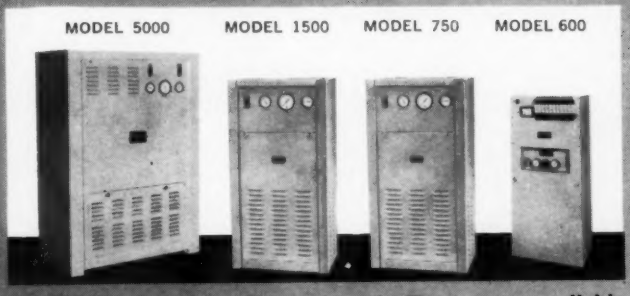
Phase One is a 200-mile backbone system between existing exchanges in the cities of Panama and David, also providing long-distance service to five other cities along the route. The main section consists of nine radio hops using Lenkurt Electric Type 74B 6,000-Mc radio and Type 45 BX multiplexing systems. Side legs use similar equipment plus Type 71 radio systems. Lenkurt Electric engineers surveyed the path, engineered the system and are installing the equipment.

In Phase Two automatic telephone exchanges, exchange buildings, and local cable distribution networks will be built to provide 2020 single-party lines to eight additional cities along with DDD throughout the network. The in-service target date for Phase Two is the summer of 1962.

The Third Phase will cover expansion of the earlier phases and extension to new cities by 1964.

Panamanian technicians will be trained in the operation, installation and maintenance of the new equipment.

a PUREGAS Pressure System for all Telephone Exchanges



PUREGAS refrigeration type Air Dryers are available with capacities to pressurize aerial and underground cables in any size Telephone company, from single cables to the largest central offices.

PUREGAS Air Dryers are fully automatic, complete units – each meticulously tested before delivery.

FEATURES

Capacity	600 to 5000 cu. ft.
Delivered Air Humidity	under 2% at 70°F.
Delivered Air Pressure	0 to 15 psig, adjustable

Automatic Safety Controls:
Adjustable high and low pressure alarm.
High humidity alarm (5% at 70°F.).
Thermal overload protection on switches and motors.

These Air Dryers are simple to install and relatively maintenance free because they have only one moving part in the airdrying circuit – the refrigeration compressor.

Air Dryers, Meter Panels and a full line of accessories can be ordered direct from your local distributor.

Write for complete details

- *Data Sheets on Model 600, 750, 1500, and 5000 Air Dryers*
- *"Why Cables Should Be Pressurized"*
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- *"Meter Panels for Continuous Feed Pressure Systems"*

PEC PUREGAS EQUIPMENT CORP.
578 Oak Street, Copiague, L. I., N. Y.

Bell Pioneers Return to Boston To Celebrate 50th Anniversary

THIS IS a great day for me. . .!" Dr. Bell proclaimed at the Telephone Pioneers' first meeting in Boston that momentous year of 1911.

Half a century later, Bell Telephone Pioneers flocked back to Boston to take part in their 50th anniversary meeting, Sept. 19 to 21.

Over 1600 delegates and guests gathered from points all across the U.S. and Canada in a city rich in telephone history: There the inventor first sent speech sounds over a wire electrically. And there an organization was born that unites in fellowship over 200,000 senior members of the industry, both active and retired.

Walter K. Koch, president of the Bell Pioneers and president of the Mountain States Telephone & Telegraph Co., presided over the anniversary get-together.

On hand to extend special greetings were Mayor John F. Collins of Boston and Gov. John A. Volpe of Massachusetts.

Also welcoming Pioneers was Erskine N. White, association senior vice president and president of the New England Telephone & Telegraph Co., host for the affair. William C. Mercer, vice president of personnel for the New England company, served as general chairman of the arrangements committee.

Telephone Pioneers hailed their golden anniversary with a program of special talks and events commemorating 50 years of progress in the industry and the Pioneer organization. Industry leaders at business sessions traced the development and future of the Bell System, The Bell Telephone Co. of Canada, Bell Laboratories and the Western Electric Company. Speakers were E. J. McNeely, president of the American Telephone & Telegraph Co.; T. W. Eadie, president of The Bell Telephone Co. of Canada; Dr. J. B. Fisk, president of Bell Telephone Laboratories; and H. I. Romnes, president of the Western Electric Co.

Mr. McNeely's talk on the Bell System stressed the five fundamental problems and opportunities that face the Bell System today: Service, earnings, competition, business ethics and politics.

On the pioneering side, President Koch told the story of the association's beginning, and its rapid growth over the years. The organization, he said, has experienced three major phases: The retrospective, the introspective and the "extraspective." In the first, emphasis was on the past accomplishments of the industry. During the introspective period, Pioneers turned their attention to the internal structure of the organization. Today's members—and those of the future—will be largely concerned with expanding their ideals out into the communities in which they live, Mr. Koch said.

H. Randolph Maddox, past association president and retired A.T.&T. vice president, presided at a luncheon honoring life members.

In the spirit of the 50th, a plaque commemorating Boston as the birthplace of the Telephone Pioneers was dedicated in the gold ballroom of the Somerset Hotel—the very place where the earliest Pioneers gathered on Nov. 2, 1911. The bronze plaque is permanently installed in the lobby of the New England company headquarters building, where Bell's original attic workshop had been reconstructed for visitors.

Shown registering at the 50th annual assembly of the Telephone Pioneers of America is Berney Simner of St. Louis, Mo. Mr. Simner is immediate past president and at present a member of the board of directors of the Independent Telephone Pioneer Association. At this golden jubilee meeting of the Bell Pioneers, Mr. Simner represented Fred H. MacGougan, president of the Independent Telephone Pioneer Association.

Closing the meeting was the Sept. 21 banquet, at which senior Vice President White was toastmaster. Mr. Koch and Frederick R. Kappel, A.T.&T. chairman of the board spoke. In his talk on the importance of believing, Mr. Koch said that "great beliefs made the telephone industry. . . . Our organization is itself a product of belief. Our founders were united by faith in the telephone. By banding together as the Telephone Pioneers of America," he continued, "they formed a new and powerful instrument. In the course of 50 years, that instrument has promoted loyalty to an industry, fellowship among telephone people and service to each other as well as the world about us."

In the principal address, Mr. Kappel defined the character of the telephone industry. "What a business stands for will never be anything different from what its people stand for," he said. The character of our business and its future success and progress is based on the goals we set and the ideas we put together as to what kind of business this ought to be, Mr. Kappel added. "Our purpose in life is to give communication service and do it well—to find better ways and do it better—to use properly and under regulation every improved means to provide growing service to meet growing needs."

Mr. Kappel also commented on the present controversy and confusion centering around space communications. Proposals for government ownership of satellite communication systems would effect "a complete departure from the American tradition that has brought about this country's

leadership," he said. It is "short-sighted enough to urge a turn-around in a national policy that has produced results unmatched throughout the world. It is even worse to base such urging on contentions that are groundless," Mr. Kappel continued, referring to comments on the violation of antitrust law. "We are confident we are in full compliance with the antitrust laws," he said.

Looking ahead to next year, Edwin M. Clark, president of the Southwestern Bell Telephone Co., invited the general assembly to hold its 1962 meeting at Dallas, Sept. 18-20.

Pioneer officers, who began their terms in July are, in addition to president, Mr. Koch and senior vice president, Mr. White:

Vice presidents: G. M. Crossgrove, Bell Telephone Co. of Canada; Mrs. Hellen McKenney, Pacific Telephone & Telegraph Co.; Robert B. Nelson, Northwestern Bell Telephone Co.; Miss Eleanor Ervin, Southwestern Bell Telephone Co.; Gordon H. Ruggaber, Wisconsin Telephone Co.; George B. King, Ohio Bell Telephone Co.; Lyman B. Wodard, Southern Bell Telephone & Telegraph Co.; Joseph H. Cromwell, Chesapeake & Potomac Telephone Co.; James J. Roche, Bell Telephone Co. of Pa.; LeRoy J. Baum, New Jersey Bell Telephone Co.; J. D. Furman, New York Telephone Co.; John M. Dick, New England Telephone & Telegraph Co., Secretary; Ralph L. Helmreich, American Telephone & Telegraph Co.; Treasurer, Harvey W. Roscoe, American Telephone & Telegraph Co.

One of the Telephone Pioneers' inspiring moments came from a friend of Dr. Bell who had sent an anniversary message. It read in part:

"I have followed with great interest the community service activities of your members, especially, of course, as they concern service for the blind. Only when America and all other countries put energy and enthusiasm into the work of increasing the opportunities of the blind and saving sight shall all mankind be blessed with the right to see. . . . I fervently pray that all of you will continue your efforts on behalf of the 14 million sightless throughout the world."

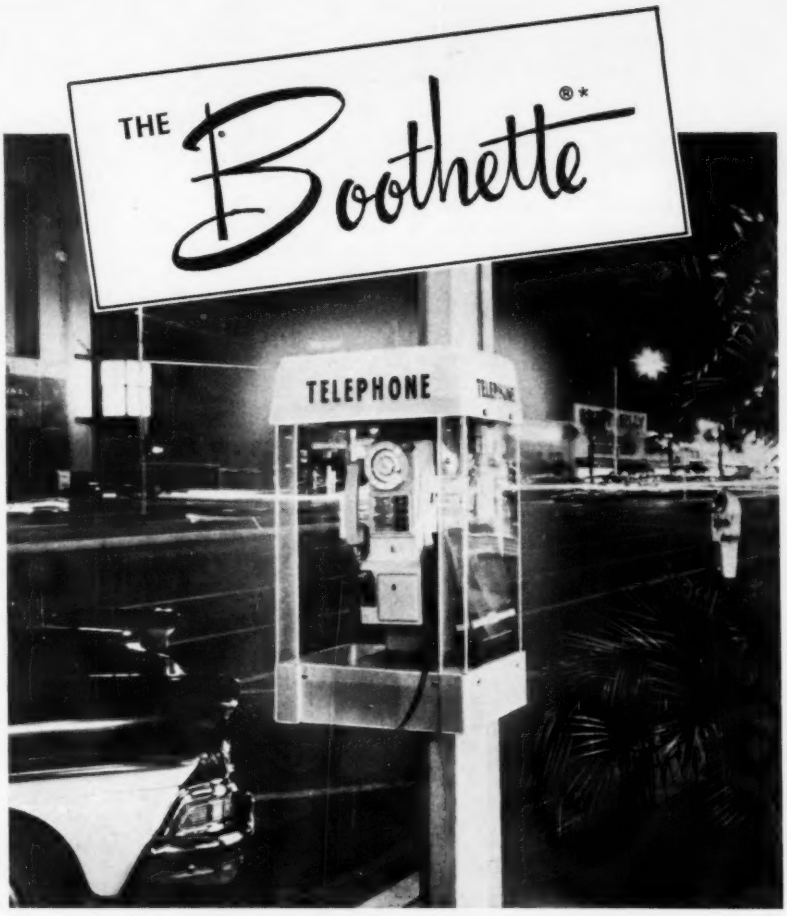
The words which had stirred Pioneers on their great day were those of Helen Keller.

Safety Memos

"When one allows his mind to drift into careless by-paths, that is the time an accident can happen. Being constantly alert, is the best insurance against accidents. Think Safety. Practice Safety."—John A. Bracken.

Poverty-Stricken

The poor man is not he who is without a cent, but he who is without a dream.—HARRY KEMP.



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Silk screened on the inside, the signing will last forever. Fluorescent lighting glows through the durable plastic dome to draw nighttime users—and to protect the phone from thieves and vandals. The dome can be white, blue or red with large contrasting red, blue or white letters, or special colors as required.

This installation will withstand all weather and temperature conditions. The clear acrylic plastic sides make both the phone and the directory easy to see.

The Gladwin BOOTHETTE can be installed on any size pole or on any type wall. Installation accessories are available from Gladwin.

Gladwin makes many other products for the telephone industry. Write for a free catalog.

*U. S. Patent No. 2,982,593.

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Area Code 404

Bell President Describes Canada's Telephone Growth

TELEPHONE growth in Canada since the end of the war has out-paced that of the United States, Thomas W. Eadie, president of the Bell Telephone Co. of Canada, said in an address at the recent 50th annual meeting of the Telephone Pioneers of America.

Mr. Eadie stated that since 1945 telephones in Canada had increased 208 per cent to 5.7 million from 1,850,000. In the same period, long distance calls rose 231 per cent to 215 million annually from 65 million.

"This is a much faster rate of growth than for either the population or the national production as a whole," he said. "Though our total figures are a fraction of those for the United States, telephone growth in recent years has been more rapid in Canada—in line with a more rapid development of Canada's national economy."

In the last 30 years the Trans-Canada Telephone System has seen its business increase "from a minimum level to more than 70 million dollars annually," he added.

Mr. Eadie pointed out that the invention of the telephone was the culmination of several years of study and research, a good part at the Bell Homestead in Brantford, Ont. It was between Brantford and the neighboring community of Paris that Alexander Graham Bell set up the world's first long distance conversation.

"Today," continued Mr. Eadie, "there are in Canada more than 2,500 telephone companies or systems, varying in size from the single rural line of a farmer's cooperative to Bell of Canada which serves more than 3.5 million telephones in the provinces of Quebec and Ontario.

"Much work has gone into the development of defense installations across the far north, a great construction and engineering task in which the American and Canadian communications and electronics industries played a major part. The DEW Line, the Mid-Canada Line and many vital connecting communications systems are among the products of our cooperation."

He explained that severity of climate has its effect on the difficulty and cost of establishing and maintaining good telephone service. As, of course, does the spread-out nature of settlement.

"A great deal of our territory," said Mr. Eadie, "consists of the forbidding northern wastes, the toughest of places to settle and live in. But a feature of recent years has been the expansion of industry into these lands and the consequent need for communications."

He cited the company's latest telephone directory covering its northernmost exchanges, Frobisher Bay, Gagnon and Goose Bay. "It lists more than 1,500 subscribers—among them 25 Eskimo families," said Mr. Eadie. "This kind of development is going on right across Canada, including the building of radio, microwave and tropospheric scatter spurs off the main Trans-Canada network."

Communications have also been moving northward through the rest of the country. "In Manitoba," he stated, "service is provided to many mining centers and the port of Churchill on Hudson Bay. In Saskatchewan, there's an exchange in Uranium City. The Alberta System is now building a microwave system up the Mackenzie Highway to the Northwest territories.

"The British Columbia Telephone Co. is building a scatter system up the coast to link with the Alaska telephone network. It has also set up one of the most extensive radio telephone systems in the world to serve some 4,000 land stations, fishing and coasting vessels up the Northern Pacific coast. Meanwhile Canadian National Telegraphs provides exchange service to many towns in the Yukon and Northwest Territories.

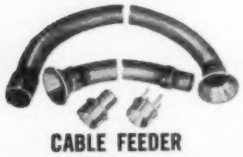
"The far north presents a big challenge to the Canadian telephone industry, one we expect to see grow in the years ahead as the North American economy has increasing need of the tremendous riches locked up in its remote and frozen expanses."

GENERAL MACHINE PRODUCTS COMPANY, INC.

Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.

C-R POWER REEL

SLACK PULLER



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COMPOUND

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Special Purpose Tools To Specifications — Catalog on Request

Over 600 various items of Line Construction Tools, Maintenance & Pressure-Testing Equipment in stock for immediate shipment

Hoy, Newby, Trottman Move Up At SW Bell; Groh to O. Bell

Justin E. Hoy has been named vice president-public relations for Southwestern Bell Telephone Co. He succeeded Harold B. Groh who resigned to join Ohio Bell Telephone Co. as vice president-operations.

Max W. Newby, formerly Missouri-Illinois general staff manager for Southwestern Bell, replaced Mr. Hoy as commercial operations engineer.

Stuart R. Trottmann Jr. was appointed to Mr. Newby's former post. Mr. Trottman has been general advertising manager for the company.

After starting with Southwestern Bell at Topeka, Kans., in 1929, Mr. Hoy held a variety of jobs in the company's commercial department in Kansas, Missouri and Texas.

He also worked for the American Telephone & Telegraph Co. in New York from 1946 to 1951.

He served as division manager in both Wichita, Kans., and Kansas City, Mo., and was named general commercial manager for Kansas in 1959. He

J. E. HOY

went to St. Louis as commercial operations engineer the following year.

Mr. Hoy is a graduate of St. Marys College, St. Marys, Kans.

Mr. Groh joined Southwestern Bell as a traffic assistant at St. Louis in 1929 following his graduation from the University of Illinois.

He worked his way up in the company's traffic department in Arkansas, Missouri and Kansas and was appointed general manager in Oklahoma in 1954.

H. B. GROH

He was elected a vice president of the company in 1957 and returned to St. Louis two years later as vice president-public relations.

Mr. Newby has had 35 years' service with Southwestern Bell, all in St. Louis.

He held various supervisory jobs in the commercial department and was named St. Louis division manager in 1953. The following year, he was appointed assistant to the general manager, and became Missouri-Illinois general staff manager in 1957.

He is a graduate of Washington University in St. Louis.

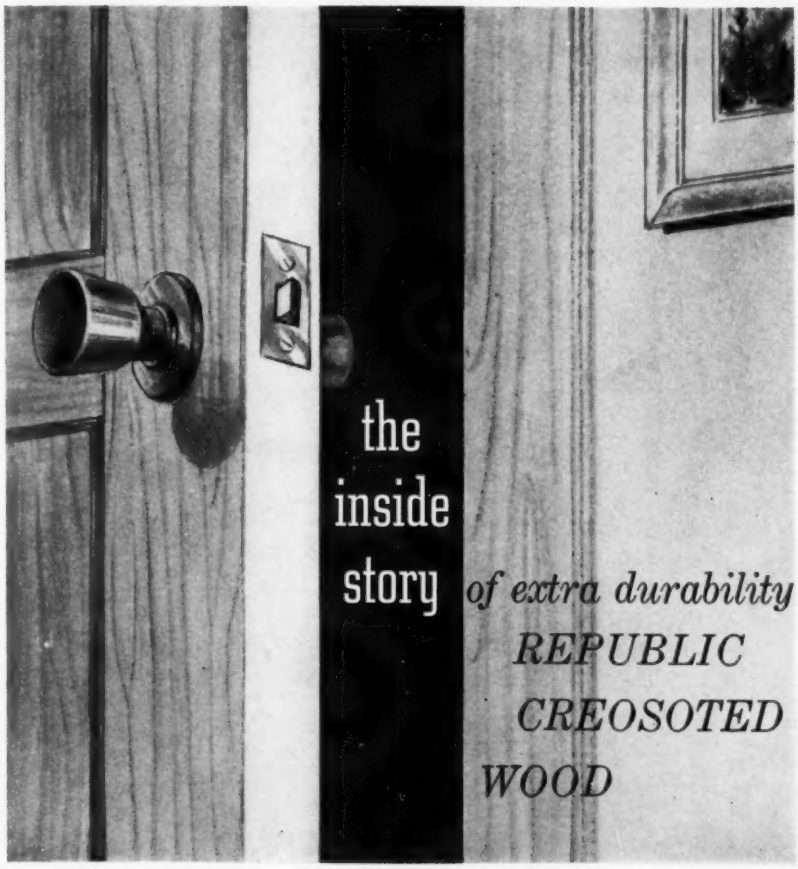
Mr. Trottmann joined Southwestern Bell in 1952 as customer relations manager after previously working in the public relations departments of the American Telephone & Telegraph Co. and the Bell Telephone Co. of Pennsylvania.

He began his telephone career with Bell of Pennsylvania in 1939 following his graduation from the University of Pennsylvania. He was appointed general advertising manager of Southwestern Bell in 1959.

Wisconsin Company Completes Third Cut-over in 60 Years

While numerous communities are still awaiting dial telephones, Medford, Wis. can point to the third conversion of its telephone exchange in 60 years.

Dial service in Medford dates back to 1901 when automatic equipment of unknown manufacture, which could not function with more than 100 telephones, was installed in a feed and flour mill owned by A. J. Perkins & Son who also owned the telephone apparatus. By 1902, there was a need



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for replacement and Strowger step-by-step equipment was installed.

Interest in telephone service spread to neighboring communities as benefits of wire communications became known at Medford and in 1907, the Midway Telephone Co. was organized by D. E. Peterson and two associates, to serve Stetsonville just 5 miles south of Medford. The Stetsonville exchange was converted to dial in 1926.

The Midway company prospered, and in 1921 acquired the Medford property which had grown to a 325-customer system.

In 1923 equipment in Medford was replaced with a new Strowger system and, simultaneously, the operator office which had handled rural and toll calls was discontinued.

Demand for service continued to develop and as 1958 drew near, directors of the company saw a need for expanded central office equipment and building facilities.

In that year the company embarked upon a $481,000 construction program—$183,000 for plant rehabilitation, $100,000 for new buildings, and $198,000 for central office facilities. With completion of the program this year and installation of North NX 2 cross-bar equipment, Medford customers experienced their third cut-over in 60 years.

Today the company maintains three exchanges: Dorchester with 487 stations, which cut to dial in 1956; Stetsonville, with 511 originally cut to step equipment in 1926, and to cross bar in 1961; and Medford with 2570. Its serving area extends over 622 square miles in Taylor, Clark and Marathon counties in northern Wisconsin.

New Medford central office building erected by Midway Telephone Co.

Spearheading the expansion program was R. R. Draheim who joined the company three years ago as manager and who today holds that position as well as the post of secretary of the board. He went to Medford with 25 years of experience in telephony and within months of his introduction to the area had the project underway.

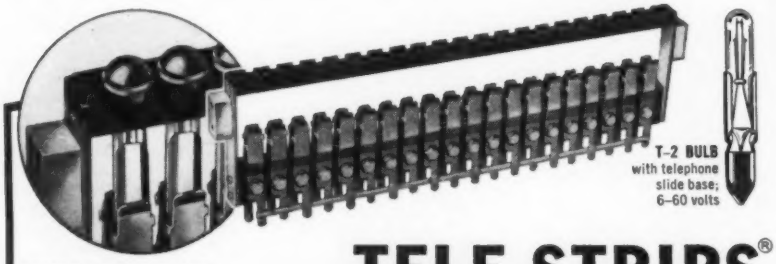
Despite improvements made the past three years, the company is looking to additional forward steps in the immediate future according to Mr. Draheim. Another $60,000 is being earmarked for regrading of rural service and $25,000 has been allocated for mobile telephone equipment. A study is presently underway to determine the feasibility of automatic toll ticketing which would require $35,000.

Control of the company still remains within the area it serves. Directors are prominent members of the community. Dr. P. S. Peiterson, the president, is a Medford chiropractor; V. A. Hirsch, vice president, is cashier of the Medford State Bank; F. A. Amacher owns a hardware store in Stetsonville; G. V. Anderson is associated with the post office at Ogema; A. J. Greiner is a retired banker; E. J. Neuenschwander is Taylor County judge; and R. H. Scott a Medford attorney.

R. R. Draheim, manager and secretary of the board of directors of the Midway Telephone Co., Medford, Wis.

While the improvement program just completed is the product of existing company management, these men award D. E. Peterson credit for the original efforts which kept dial telephone service functioning in the city long before many larger telephone firms were convinced mechanized switching was here to stay.

Mr. Peterson headed Midway for 50 years and was active as a director of the Wisconsin State Telephone Association for more than a score of years. He died in November 1957. His widow, Mrs. Peterson, continues to hold stock in the company as does a daughter, Mrs. Ed Westermeier, who is the treasurer of the board and bookkeeper.



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EXECUTIVE VICE PRESIDENT'S REPORT

(Continued from page 30)

line, or system, shall be fined not more than $10,000 or imprisoned not more than ten years, or both."

Anti-Slug Legislation. Slugs, spurious coins and foreign currency deposited in coin boxes continue to plague telephone companies. The degree of the nuisance varies from company to company and state to state. Race tracks, industrial areas and towns close to international boundaries are especially vulnerable.

While the situation is not as bad as it was prior to the enactment in 1944 of the Anti-Slug Law supported by our association, losses of the telephone industry are still substantial. The Bell System losses are put at $800,000 a year. We estimate Independent companies losses at over $100,000.

In the present Congress, S. 2242 and H.R. 8038 were introduced by Senator Symington (D., Mo.) and Congressman Sullivan (D., Mo.). These measures have as their purpose the plugging up of certain loopholes that have developed in the earlier law in the intervening years.

Hearing upon these measures were held on July 19 before Senate and House Judiciary Subcommittees. Our association in oral testimony warmly supported the bills, as did the AT&T in a letter filed for the record. . . .

Among other things the bills would broaden the prohibitions of existing law to include coins of all dimensions, not merely 1 cent, 2 cent, 3 cent and 5 cent pieces as at present. The measures would also apply to paper currency, for which there are now machines for making change.

H.R. 8038 passed the House on September 6, and action by the Senate is now being awaited. . . .

General Services Aministration. The General Services Administration (GSA) is one of the magnificent examples of growth of federal bureaucracy. Created in 1949, it is commonly referred to as the housekeeping part of the federal government. Outside of regulated enterprise it is not generally known that here is one of the most duplicative of public agencies.

Despite the fact that there are five or six independent agencies of the federal government charged with the duty of regulating telephone companies, power companies, railroad companies and transportation companies, and despite the further fact that 48 out of 50 states have local tribunals with jurisdiction over the intrastate operations of the same enterprises, there is still another agency of government—the GSA—which conceives of its job as a watchdog of all of these tribunals, federal and state.

In the Federal Property and Administrative Services Act of 1949, Public Law 152, there is a provision in Section 201(a) reading as follows:

"The administrator shall, in respect of executive agencies, and to the extent that he determines that so doing is advantageous to the Government in terms of economy, efficiency, or service, and with due regard to the program activities of the agencies concerned. . . .

(4) with respect to transportation and other public utility services for the use of executive agencies, *represent agencies in negotiations with carriers and other public utilities and before Federal and State regulatory bodies.*" (Italics mine).

On the surface this looks like a broad grant of power. But notwithstanding the breadth of language surely it could not have been intended by the Congress, after setting up individual agencies for express purposes, to create still another agency to look over their shoulders in order to see whether they are performing their duties as intended by their creator. Some of the state commissions have shown resentment against what the GSA has been doing in state rate proceedings. They have asserted it was never intended that the GSA should become a super-regulatory agency, and

(Continued on page 150)

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GOOD NEWS

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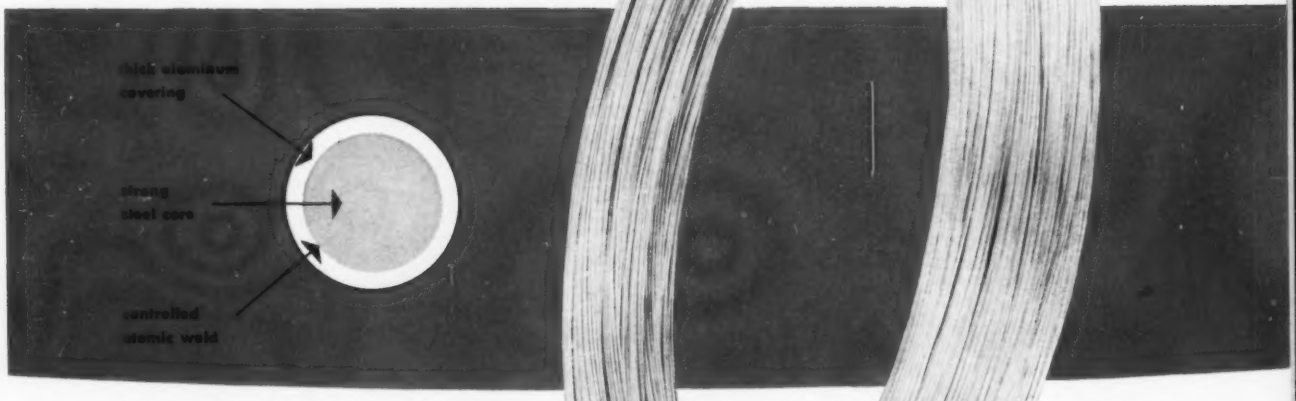

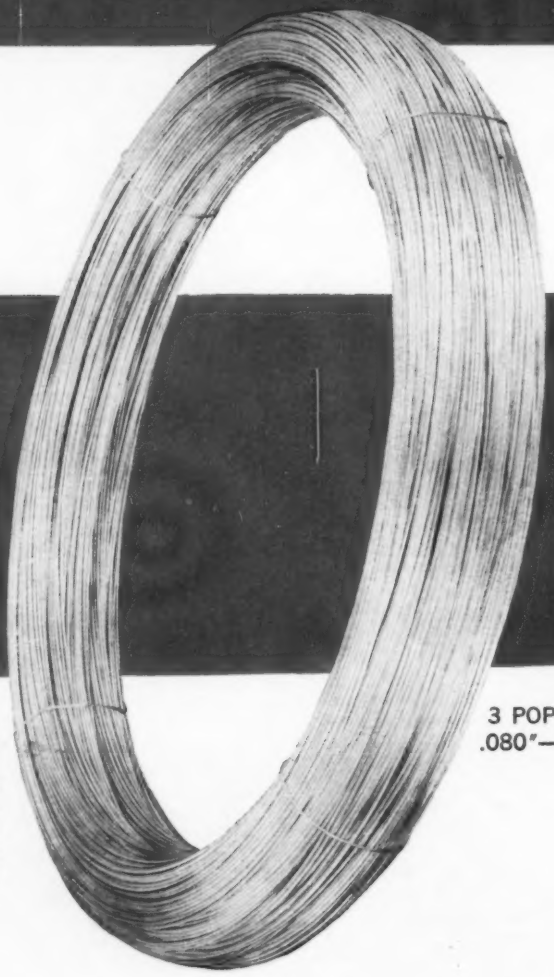

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that its intervention in rate cases impugns the competence and integrity of normal regulatory authorities.

The legislative history of the quoted language shows that GSA's activities before regulatory agencies were to be for the purpose of obtaining reasonable rates and services for a particular commodity or service and were not intended to encompass the litigation of over-all earnings levels or rate structures of carriers or utilities.

Yet more and more it is in the latter class of cases that the GSA has been appearing.

Our board of directors in October a year ago adopted a resolution on this matter and directed that appearances be made before the proper committees of Congress to draw attention to what was happening. Our association counsel presented arguments before both the House Appropriations Committee and the Senate Appropriations Committee. The United States Chamber of Commerce and other interests including the NARUC also presented testimony.

When reporting out the Independent Offices appropriation bill the Senate Appropriations Committee materially reduced the amount of money to be available to the GSA and stipulated that none of it should be used "for the preparation or presentation of evidence or arguments before federal and state regulatory agencies concerning the regulatory policies of such agencies on over-all earnings level or total property evaluation of transportation or utility companies." Over the stiff opposition of a militant minority led by Senator Proxmire (D., Wis.) the Senate voted 55 to 32 to uphold the arm of the Senate committee.

This represented a substantial victory for regulatory enterprise, but in an atmosphere of the New Frontier a conference committee struck out the quoted salutary language and restored much of the cut in the GSA appropriation that had been made in the Senate.

I am glad to be able to say however that the conference committee in its report, later adopted by both Houses, used the following language which it is hoped may have a restraining effect on the government agency involved:

"The conferees expect the General Services Administration to act with good judgment and not enter into any harassing activities, to avoid trivialities, and protect the interest of the government as a consumer. The conferees also suggest that the respective legislative committees review the basic legislation to determine if any revision is needed."

Anti-Gambling Legislation. As respected citizens of the communities in which they operate, the managements of telephone companies are as much opposed to gambling as anyone could be. They have however resisted legislation seeking to make crime detection agencies out of them.

Our association last summer found it necessary on this account to oppose certain bills advocated by Attorney General Robert F. Kennedy in the bad form in which they were drawn. These bills, ardently advocated by the Department of Justice, would have subjected telephone companies and other communication common carriers to certain sanctions if they leased, furnished or maintained a wire communication facility with intent that it be used for the transmission of bets. In the first place, telephone companies would not entertain such an "intent."

After objection urged at public hearings before Senate and House Judiciary Sub-committees by our association and the Bell System, Senate Bill 1656 as passed by both branches of Congress limits the application of its provisions to those engaged in the business of betting. The bill provides a penalty up to $10,000 or imprisonment, or both, to be imposed upon anyone who knowingly uses "a wire communication facility" in the interstate transmission of gambling information.

The bill will require communication common carriers to refuse or to discontinue service when notified by a law enforcement official, in writing, that the facility is being used or will be used for transmitting or receiving gambling information.

The bill also provides "that no damage, penalty or forfeiture, civil or criminal, shall be found against any common carrier for any act done in compliance with any notice received from a law enforcement agency." . . .

Activities of FCC

Let me now turn to the Federal Communications Commission and see what it is doing that is of interest to Independent telephone companies. . . .

Interstate Rate Reduction. As our members are aware, the telephone industry is faced with the threat of another interstate rate reduction. Like the 50 million dollar reduction in July 1959, it stems largely from prodding by Chairman Emanuel Celler of the House Judiciary Committee.

On Feb. 4, 1960, the congressman wrote the chairman of the Federal Communications Commission suggesting the propriety of a reduction of 70 million dollars, a figure he arrived at by assuming that a 6½ per cent return on net book cost was a reasonable one whereas the return actually being earned was in excess of 7 per cent. He drew attention to action by the commission in 1953 granting a 65 million dollar *increase* in rates designed, as the commission stated, to bring the Bell System's rate of return up to the level of 6½ per cent.

More than a year has elapsed since the beginning of the Celler correspondence. Though Bell System earnings have shown even greater improvement, the commission has demonstrated its independence by refusing

(Continued on page 154)

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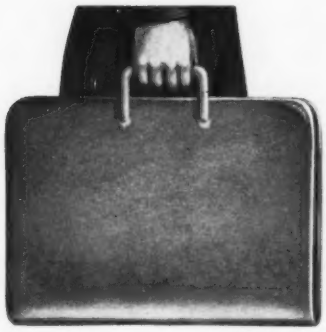

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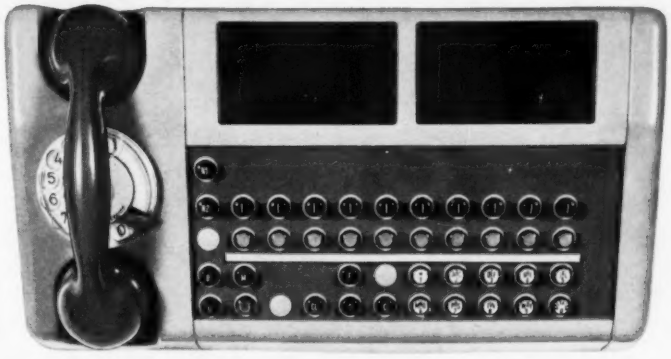

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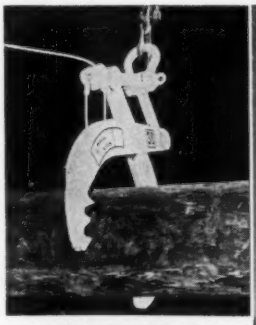

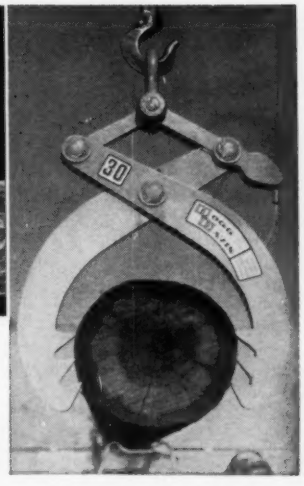

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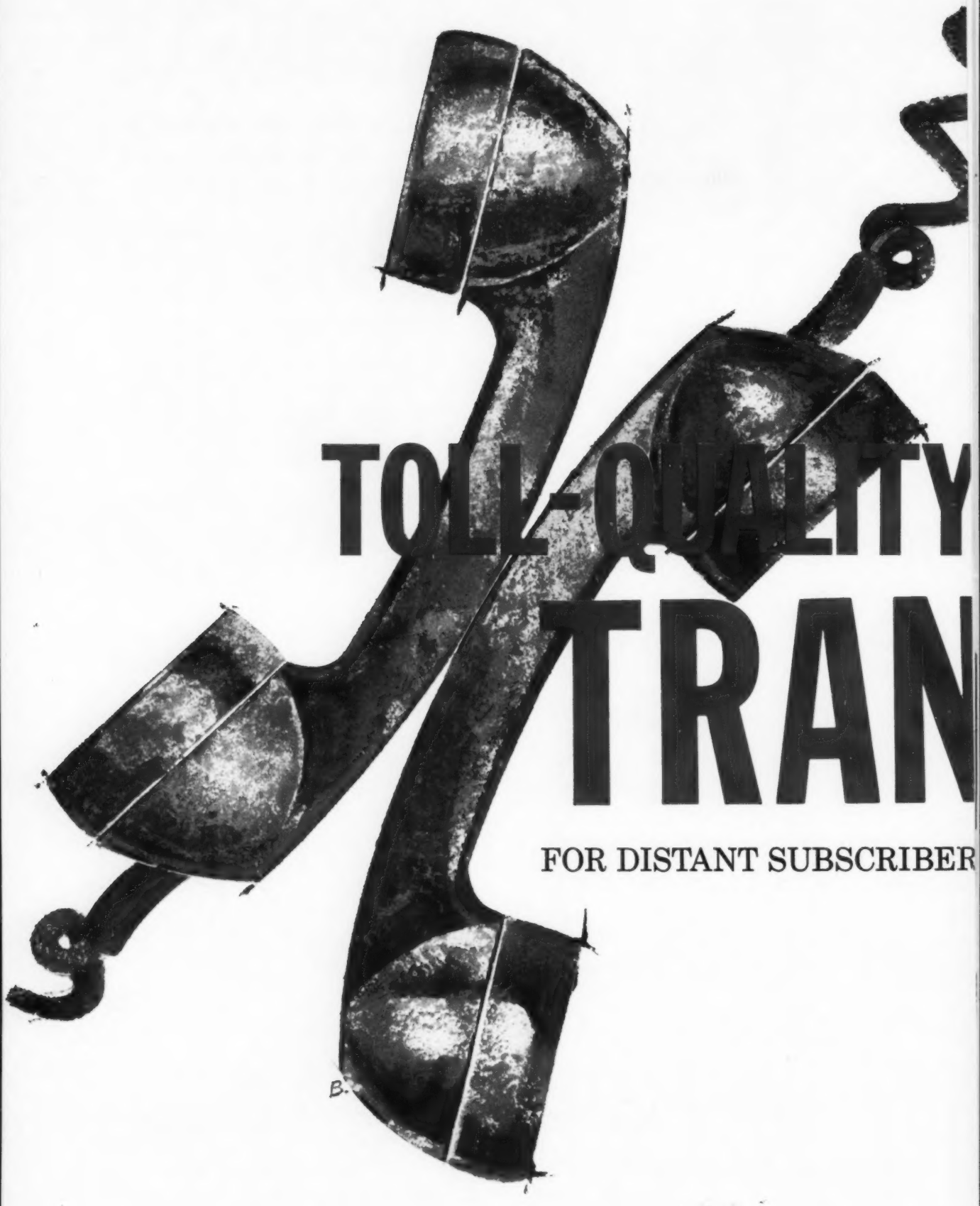

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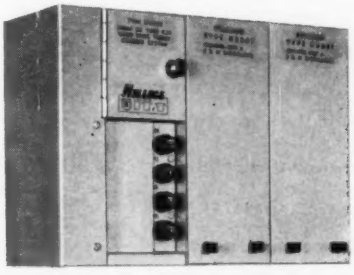

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to jump through the hoop for a single member of Congress, who has no more right than any other member to call upon the commission for any particular action.

Our Independent telephone companies have a big stake in this matter. They will expect to be kept whole in any reduction that might eventuate. Without undertaking to pass judgment on what constitutes a fair rate of return, leaders in our branch of the industry point out that the Bell System could do much to alleviate its present problem if it would accept the USITA separations manual and on business interchanged with Independent companies make settlement arrangements more closely corresponding to what justice and equity require.

Because of the interest of Independent companies in the level of interstate rates, I have addressed several letters to the commission drawing attention to the impact which would be felt by Independent companies by any reduction in interstate rates unless appropriate provision were made for their protection. Independent companies originate and terminate approximately one billion messages each year jointly with Bell companies. Most Independent companies use average cents per message schedules to determine their participation in revenue derived from interchanged message toll telephone traffic.

The level of settlements in these schedules reflects the average revenue per message on all message toll telephone traffic originated by the customers of an Independent company, and a reduction in interstate rates would therefore lower the average revenue per message and adversely affect the revenues received by Independent companies from interchanged business.

We have been "assured" that our needs "will be given due consideration by the Commission at such time as the matter of any reduction in interstate earnings is before it."

General Microwave Case. This (general microwave case) is one of the major cases before the commission (FCC) in which our association has taken a part. The commission's Report and Order in 1959 opening the door to the development of point-to-point radio systems by the private radio services was the genesis of the WATS and TELPAK concepts.

In my report to the 1960 convention, I discussed our petition for reconsideration of the commission's views on the subject of interconnection between private and common carrier microwave systems. As a result of our petition and the petitions filed by AT&T, GT&E Service Corporation and Western Union, the commission placed a stay on its proposed frequency allocations to the private radio services. My report referred to the one-day hearing held by the commission on the frequency needs for space communications programs, needs that had not been an issue in the original hearings under this docket. I shall discuss the present status of this program under a separate item to follow.

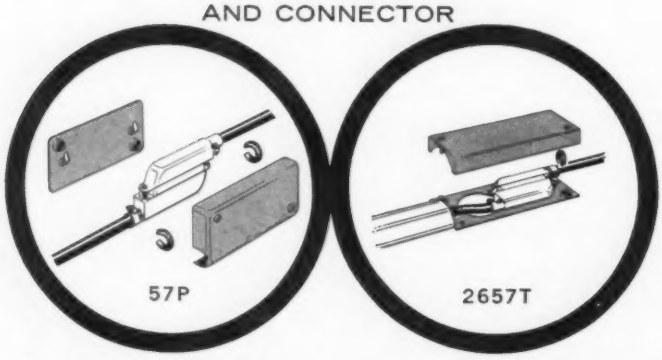
Since my 1960 report, the commission has issued an Opinion and Order in Docket 11866, reaffirming for the most part its 1959 order and removing the stay on the use of microwave frequencies by the private radio services. In this connection, the commission, in December, 1960, closed out the Central Freight Lines, Inc. case and granted authorization for a microwave system between Dallas and Fort Worth to be used by this concern and, on a non-profit, cost-sharing basis, by several other truck lines. The commission also granted petitions from the Minute Maid Corp. in Florida and the University of Texas requesting that their applications for microwave systems be processed. The commission clarified its conclusion regarding interconnection and restated:

> ". . . . that interconnection was a matter which would be governed by tariff regulations and practices which are required to meet statutory tests of justness and reasonableness . . . . such tests can only be applied on the basis of facts involved in a particular case and in accordance with specific procedures established for the regulatory administration and review of tariffs by the local, State or Federal regulatory commission involved."

Educational television broadcasting interests had also petitioned the commission to reconsider the allocation of frequencies below 10,000 Mc and claimed that educational television networks could be interleaved in the common carrier frequency assignments. The commission in its Opinion and Order in Docket 11866 also pointed out that its 1959 report "determined that it was not generally feasible to provide for sharing between common carrier and non-common carrier operations. We adhere to this view." However, the commission allocated, under the Business Radio Service, the band 6575-6875 Mc "only for intercity closed circuit educational television systems."

This year, Congress has been considering several proposals for providing federal matching funds to states for the development of educational-TV broadcast facilities. The Committee on Interstate and Foreign Commerce of the House of Representatives has reported H. R. 132, which would amend the Communications Act of 1934 to establish federal matching grants of up to one million dollars per state to be administered by the Commissioner of Education in the Department of Health, Education and Welfare. The committee's report indicates that "broadcasting" is defined by the act as dissemination of radio communications intended to be received

TWO NEW FITTINGS TO HOUSE PLUG AND CONNECTOR



For use with plug-ended multi-button telephone sets, these two new Wiremold Service Fittings are available in blue-beige, smooth enamel finish (57P), and non-glare, light gray finish (2657T). Use 57P for wall mounting; use 2657T for floor mounting with overfloor duct (1500 or 2600 Wiremold) or with underfloor duct, and for wall mounting with 4" box. Phone for data sheet 636.

WIREMOLD®

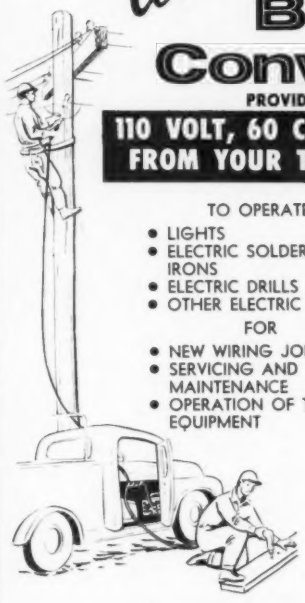
THE WIREMOLD COMPANY ■ HARTFORD 10, CONN. ■ ADams 3-6251

IN THE FIELD . . . AWAY FROM REGULAR POWER

terado Battery Converters

PROVIDE

110 VOLT, 60 CYCLE A.C. POWER FROM YOUR TRUCK BATTERY



TO OPERATE

- LIGHTS
- ELECTRIC SOLDERING IRONS
- ELECTRIC DRILLS
- OTHER ELECTRIC TOOLS

FOR

- NEW WIRING JOBS
- SERVICING AND MAINTENANCE
- OPERATION OF TEST EQUIPMENT

"TRANSISTORIZED" THE CONTINENTAL 275 to 300 watts MODEL 50-193 USERS NET $116.34

THE SUPREME 175 to 250 watts MODEL 50-153 USERS NET $73.34

Both models have remote control

mfd. by terado COMPANY

1072 RAYMOND AVENUE, ST. PAUL 8, MINNESOTA

BRADY WIRE MARKERS STICK

. . . TO YOUR FINGER from Card to wire. No troublesome tabs to remove . . . no chance to drop or lose Brady Markers.

. . . TO THE WIRE — any size wire up to 7/8" diameter — permanently . . . stay stuck in temperatures to 300°F. 1½" or ¾" Markers available from distributor stocks in 200 major cities.

4 MARKER SIZES — 6 MATERIALS
3000 STOCK ITEMS
350 Distributors for Fast, Local Service

FREE NEW Bulletin and Testing Samples. Write:

107

W. H. BRADY CO. • 732 W. Glendale Ave. • Milwaukee 9, Wis.

Manufacturers of Quality Pressure-Sensitive Industrial Tape Products, Self-Bonding Nameplates, Automatic Machines for Dispensing Labels, Nameplates, Masks and Tape
EST. 1914

NEW TELEPHONE TOOL SAVES MONEY

THE OSBORNE DUO-COM 100ST*

Now this low-cost, pocket-size, 2-way radio is available at an operational cost of 2¢ per hour. And the man/machine hours saved by 2-way radio more than justify the low fixed capital expenditure.

Now available in industrial a m frequencies from 25 m/c to 50 m/c and telephone maintenance service frequency of 35.16, in stock. Specify your frequency.

Uses: Orienting microwave antenna • outside direct routing • strand placement and removal • underground house and block aerial placement and removal • open and multiple wire replacement emergency trouble clearing and restoration breaks, etc.

OSBORNE ELECTRONICS CORP. Dept. T
13105 S. Crenshaw Blvd.
Hawthorne, Calif. • OR 8-9211
Please rush me complete details on your DUO-COM 100ST

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE____

*F.C.C. TYPE ACCEPTED

OSBORNE Graybar ELECTRIC COMPANY, INC.

by the public directly. It states: "Thus, under the committee substitute, grants for the construction of educational television broadcasting facilities could not be used to acquire or install transmission apparatus intended for use or to be used for transmitting closed circuit television programs."

Frequencies Between 25 and 890 Mc. Another major case pending before the FCC in which we have a vital interest is Docket 11997, an inquiry into allocation of radio frequencies between 25 and 890 Mc. In this proceeding the director of our (USITA) Engineering Sub-committee on Radio and Carrier and our Radio Engineer testified on behalf of our association in the summer of 1959. The hearing phase of this docket was hurried to conclusion in order to permit testimony to become a part of the radio spectrum requirements report needed by the United States delegation to the International Tele-communications Union Conference in Geneva, Switzerland in December, 1959.

No major reallocations of frequencies have yet been announced by the commission although a rather extensive realignment of the 152 Mc mobile service frequencies available to the private radio services has been made. The channels previously allocated to the Citizens Radio Service were sharply reduced and the surplus channels resulting from this reduction were redistributed to the various mobile services in this region.

This portion of the radio spectrum includes the VHF and UHF television broadcast channels, as well as non-government allocations to the mobile and aviation services. In addition, our government has large blocks of frequencies in this region. The constantly increasing demands for additional channels for mobile radio purposes, for a more adequate television broadcast service and for vital defense purposes vie with each other for portions of these frequencies.

A proposed "swap" of frequencies between the government and the non-government portions has been under consideration by the commission and OCDM. However, OCDM recently concluded that imperative defense requirements prevented further consideration of such a frequency change. The commission's inability to develop a long-range program concerning the TV and mobile services in this frequency region is one of the obstacles to announcement of a decision in this case.

Satellite Communications. The success of AT&T's "Project ECHO," in establishing long-range communications paths by the bouncing of signals off a huge inflated sphere rotating around the earth and the increased international activity in manned and unmanned satellite launchings have given high priority to the development of a commercial communications satellite program. Following the one-day hearing in Docket 11866 the FCC established Docket 13522 as its repository for plans, predictions and programs for the long-range development of space communications.

Early in 1961, the FCC published a Notice of Inquiry into the administrative and regulatory problems relating to the authorization of commercially operable space communications systems Docket 14024. On May 24, 1961, the Commission's First Report in this docket pointed out that economic and technical limitations would support only one system for some time, that communication via satellite would be a supplement to rather than a substitute for existing communications systems and that the international common carriers are logically best qualified to determine the nature and extent of the facilities needed. Ruled out by the commission were the domestic common carriers and certain interested manufacturers and an *ad hoc* committee of international carriers was created. Criticism of this plan was voiced in certain quarters of Congress during the many separate congressional inquiries into space communications during the recent session.

The GT&E Corp. petitioned the FCC to modify its May 24 report to permit participation by domestic common carriers, or that GT&E Corp. be considered an international carrier. The General Electric Co. and its subsidiary, Communications Satellites, Inc., also petitioned for a modification to permit participation in this joint venture by others in the aerospace and communications industries and the general public. On July 25, the FCC denied GT&E's request to be considered an international carrier and dismissed without prejudice to further participation in the proceedings all other petitions. At the same time, the commission released a supplemental notice establishing the public interest objectives for this joint venture, procedures for the *ad hoc* committee to follow and named the following international common carriers as members:

American Cable and Radio Corp.
American Telephone & Telegraph Co.
Hawaiian Telephone Co.
Press Wireless, Inc.
Radio Corporation of Puerto Rico
RCA Communications, Inc.
South Porto Rico Sugar Co.
Tropical Radio Telegraph Co.
United States-Liberia Radio Corp.
The Western Union Telegraph Co.

Settlement Committee Activities

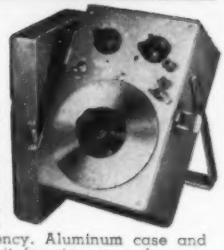
The broad field of toll settlements is one of transcending importance.

The aggregate amount of settlements which Independent companies received from Bell System companies on interchanged business, in 1960 was approximately 265 million dollars. This compares with 12 million dollars 25 years ago in 1935. In the eight-year period from 1953 to 1961 alone the total an-

Stewart

TEST EQUIPMENT

Locates Trouble FAST



Stewart
Full Transistor
OSCILLATOR
MODEL TO

Completely transistorized unit with no power consuming tubes. 4½" dial of 300° excursion with 6/1 knob ratio permits accurate setting of frequency. Aluminum case and cover protect unit for storage and carrying. Aluminum handle provides angular support for easy reading.
Frequency Span 5.5 Cycles to 600 KC in 5 bands.
Dial Span 10 to 1.
Output impedance 600 ohms.
Maximum Output Voltage 5 volts into 600 ohms. Open circuit 10 volts. Variable by output attenuator.
Voltage Stability within 1%. Frequency Stability instantaneous and longtime within 2%.
Distortion at rated output less than 1%.
Size 5" x 8" x 4½".
Uses four 6 cell mercury batteries.
Weight with batteries 4 pounds.

Stewart
Full Transistor
VOLTMETER
MODEL TR

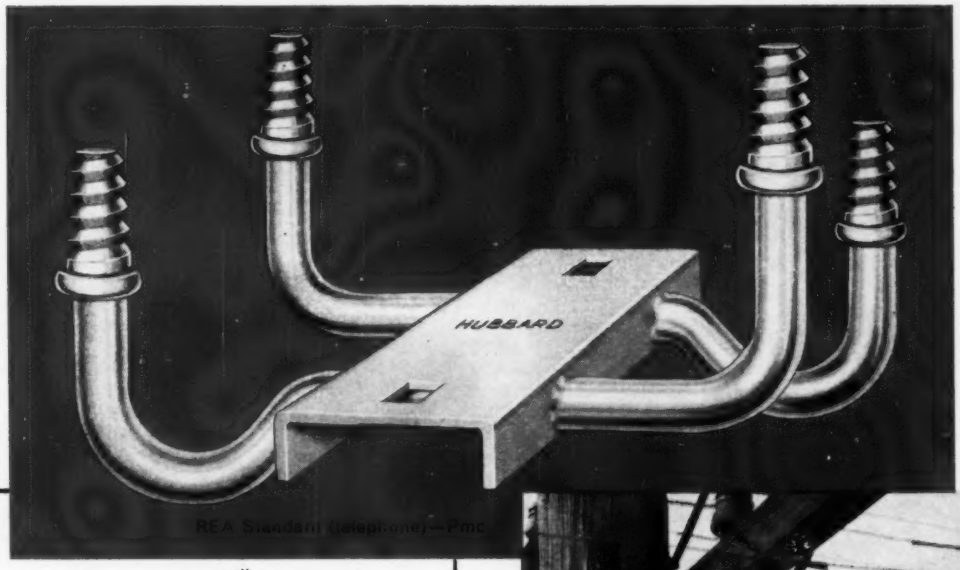
For portable and field use. Accuracy and stability are combined in this laboratory instrument.

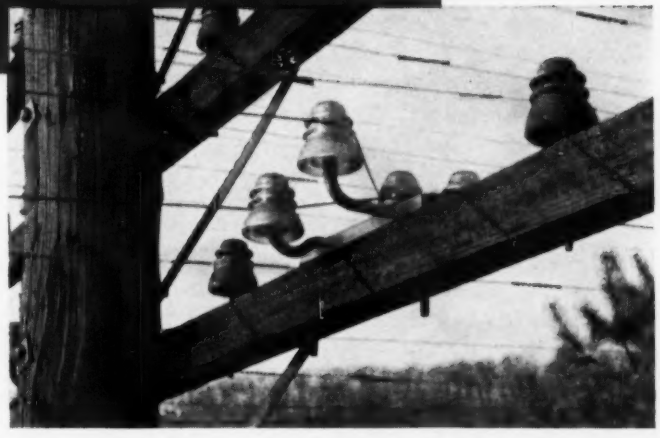
NO TUBES—A completely transistorized Unit, economical in battery consumption. Requires no warm-up time.
High stability is achieved by two independent feedback loops, precision resistors and printed circuit wiring. High input impedance and freedom from fluctuations, hum and capacitance of power lines. Save time and assure better testing.
—50 DBM to +50 DBM, 11 ranges in RED, .003 to 300 volts, 11 ranges, in BLACK. Input impedance 3 megohms shunted by 25 micro-microfarads.
Accuracy 3%—50 cycles to 600 KC. 5%—30 cycles to 1 MC.
Size 5" x 8" x 4½".
Battery requirement two 5 cell mercury batteries. Aluminum case.
Weight with batteries 2 pounds.

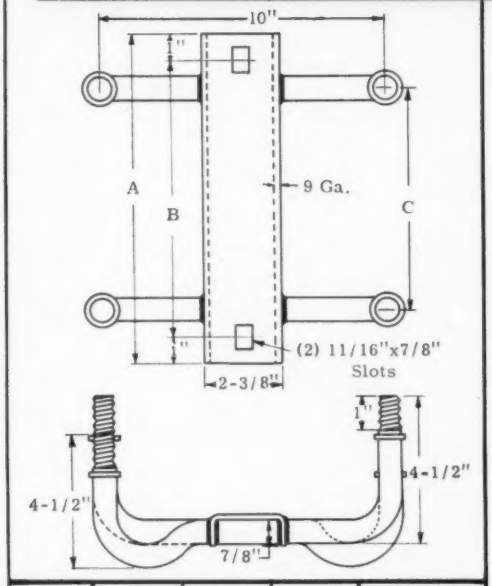
THESE UNITS AS A COMBINATION, PROVIDE ALL EQUIPMENT NECESSARY TO CHECK TRANSMISSION LINES, CARRIER EQUIPMENT, SOUND SYSTEMS AND OTHER TYPES OF FIELD AND LABORATORY WORK.

STEWART BROTHERS
Division of Instrument Laboratories
215 W. WALTON PL., CHICAGO 10, ILL.

STRONGER... *Lighter...*
TO MEET YOUR TRANSPOSITION NEEDS







Stock No.	A	B	C	Weight Pounds Per 100 Pieces
9227	12"	10"	8⅜"	650
9228	14"	12"	10⅜"	690
9238	10"	8"	6⅜"	615

This new point-type transposition bracket was developed recently in order to combine maximum strength with minimum weight, thus assuring trouble-free service under the most adverse operating conditions. Although the function of this type bracket remains unchanged, the physical characteristics differ considerably from earlier designs as a result of modern, all welded construction.

This style bracket was designed for spindle threaded insulators and is mounted by means of two ⅝-inch carriage bolts (not included). Crossover clearance is 1-inch.

The point-type transposition bracket is but one of many styles available. Contact your nearest Hubbard representative for further details on this and other designs.

HUBBARD AND COMPANY

FLEXIDUCT
in
world-wide
use

takes
wiring over
any floor

Installations in all 50 states, Canada, Mexico, Europe, South America, nearly every foreign country.

Made of durable, extruded rubber; most efficient electrical and communications over-floor wiring protector; flexible, economical, permanent. Easily, quickly cemented down—no noisy drilling, pounding. Caster-based equipment rolls safely, smoothly over beveled sides. With universal parts, fittings (tee, ell, riser, combination).

3 Flexiduct sizes: from single conductor to 75 pair cable, plus quarter round.

Always keep Flexiduct on hand. Available through:

Buckeye Telephone & Supply Co.
Graybar Electric Co., Inc.
ITT Kellogg
Leich Sales Corp.
Stromberg-Carlson
Winders & Geist, Inc.
Western Electric Co., Inc., supplies Bell Systems only.

Write for descriptive folder.
WINDERS & GEIST, INC.
2219 North Cotner Blvd.
Lincoln, Nebraska

nual increase, based on the volume of messages in the year in which the increase was effected, was 51 million dollars made up of the following:

$18 million in 1953.
$11 million in 1956.
$12 million in 1959.
$10 million in 1961.

For the year 1961 the total of 51 million dollars equates to a revenue increase of $4.34 per station, based on a station count of 12,075,000. The overall effect is really much greater than these figures indicate due to the increase in message volumes that reflect larger settlements per message.

Announcement of the 10 million dollar increase in 1961, which became effective with Apr. 1 billings, was made in a joint report of our Settlements Committee and Bell Systems representatives, distributed with our Member Letter of Mar. 31. It was estimated that since a number of Independent companies are settling on interchanged business on bases other than average schedules the new adjustment would provide an increase of approximately seven million dollars overall for companies using 1959 average cents per message schedules.

This increase, interim in nature, is applicable for a period of one year. In the intervening time a nationwide study of the "A", "B", line haul and automatic ticketing functions of Independent companies has been undertaken by the two branches of the industry. The average schedules will later be adjusted to reflect the results of the study upon its completion.

The 1961 increase included an element to recognize participation by Independent companies in terminating inward Wide Area Telephone Service (WATS) traffic. In view of this recognition, the USITA recommended that Independent companies join with the Bell System in the provision of WATS, both interstate and intrastate.

Continued alertness in this area of association activity is required and fully recognized by our Settlements Committee. As soon as one successful negotiation with the Bell System is completed the committee begins studies to lay a foundation for further demands in order to compensate Independent companies for increased costs and other factors incurred or experienced in handling interchanged business in the meantime. How to eliminate the time lag is a vexatious problem and search for a satisfactory solution is under constant review.

The Settlements Committee report to our board of directors should be looked to for a detailed summary of its activities. Its members are to be commended for diligent attention to important duties and for their efforts to obtain a proper division of revenues from interchanged business.

USITA Separations Manual. In the field of settlements on business interchanged with Bell System companies a few words about our association's separations manual may be appropriate at this point in my report.

The USITA separations manual was prepared in our Washington office in the summer of 1959 by a three-man task force pursuant to earlier authorization by our executive committee. When the manual was approved by the board of directors in March 1960 it was specified that the association should make a witness available wherever the manual might be in litigation. It has been in litigation in five states—Ohio, Kentucky, Florida, North Carolina and the State of Washington.

General Telephone companies are the complainants in four instances, and in the fourth the West Coast Telephone Co. is an additional complainant. In the fifth state, North Carolina, the proceeding is one initiated by the commission on its own motion. (USITA) Settlements Coordinator Alexander has served as a witness in each case, testifying as to the origin of the manual and the propriety of its use for the purposes intended. The companies immediately involved have furnished witnesses from their own ranks. . . .

In none of the cases has the USITA sought to become a formal party litigant.

The importance of doing all the association can to assure regulatory approval of the manual cannot be overemphasized. If success can be achieved in obtaining regulatory validation of the manual the result will definitely inure to the benefit of practically all Independent companies.

A favorable decision on the more crucial parts of the manual was handed down by the Ohio Public Utilities Commission last June. When it was referred to in our Member Letter No. 816 the following appraisal of the decision was given:

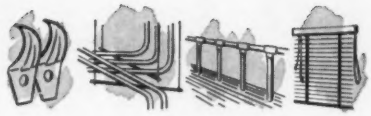
> "The decision means at least $600,000 annually to General (Tel. Co.) in increased compensation for the use of its facilities in handling intrastate toll messages. The decision also means that many other Independent telephone companies in Ohio will benefit proportionately if they make a cost study of their individual operations. If validation of the USITA separations manual should be forthcoming in other states, it is manifest that Independent companies throughout the United States stand to gain accordingly."

The decision of the Kentucky commission in the complaint case before it was adverse to the complainant Independent company. An appeal has been taken by the company to the courts. In the other three cases mentioned earlier, decisions by the regulatory bodies were being awaited at the time this report to our convention was being prepared.

Illicit Toll Usage

One of the problems besetting telephone companies is the growing use of subterfuges to evade the payment of legitimate charges for long distance telephone service. Fictitious names of

(Continued on page 162)



save on installation cost
...anchor them to masonry with

RAWLPLUGS

UNIVERSAL ANCHORS, FOR FASTENING TO ALL KINDS OF MASONRY

Made of tough jute fiber, not plastics—not affected by heat, cold, or vibration—Rawlplugs are a good way to anchor fixtures quickly, firmly, economically. Learn the best way for your job . . . get a FREE copy of this authoritative booklet by the people who have been specializing in masonry anchoring for 40 years, from your supplier or

The RAWLPLUG Company, Inc.
230 Petersville Rd., New Rochelle, N. Y.
Please send a FREE copy of "Install It for Less" to

(Name).....

(Title).....

(Firm).....

(Address).....

.....

R-27

RAWL PRODUCTS

1921–1961 Anchoring and Drilling Devices for Fastening Anything to Masonry

PIEDMONT WOOD POLES

PERFORMANCE IN THE SKY

PERMANENCE IN THE GROUND

PERMANENCE WITH PIEDMONT P-W-P

PIEDMONT

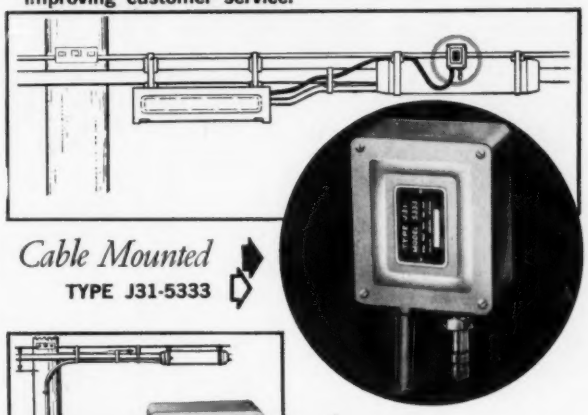
Wood Preserving Co.

SPARTANBURG S. C.

AUGUSTA GA.

UE Protection for PRESSURIZED CABLE SYSTEMS

with U.E.'s improved, compact Pressure Guard as the proven aid for reducing cable maintenance costs and improving customer service.



Cable Mounted

TYPE J31-5333

Pole Mounted

TYPE J31-5338

WHY A PRESSURE GUARD IS ESSENTIAL FOR MAXIMUM EFFICIENCY IN PRESSURIZED CABLE SYSTEMS

- The Pressure Guard monitors and protects cable at all times, not just periodically.
- The Pressure Guard ensures routine sheath breaks are detected and localized prior to service disruption.
- The Pressure Guard provides one more value that may be detected at the test desk.
- The Pressure Guard transmits its signals via working subscriber lines rather than requiring special circuits.
- The Pressure Guard reduces cable maintenance costs and improves customer service at very low cost.
- The Pressure Guard's low cost permits liberal usage for maximum protection.

SPECIFICATIONS

TYPE J31-5333

Field Adjustment Range	0 to 10 PSI
Factory Setting	2 ± ¼ PSI on falling pressure
Pressure Response	4 ± ½ oz.
Proof Pressure	30 PSI
Electric Rating	0.01 amp 100 V DC
Load Resistor	Carbon composition 270,000 OHM 1 watt

Drop Wire .....6' Type SJO#18 stranded 2.0 conductor
Pressure connection: ⅛ NPT (⅛ x ⅛ elbow provided separately; usually not required with direct sleeve mounting).

TYPE J31-5338

Same as above with the addition of pole mounting provisions and 6' of copper tubing.

Available through regular suppliers of telephone equipment. Contact them for new Type J31 Pressure Guard brochure. Catalogs covering other UE pressure, vacuum and temperature controls also available.

UNITED ELECTRIC

CONTROLS COMPANY

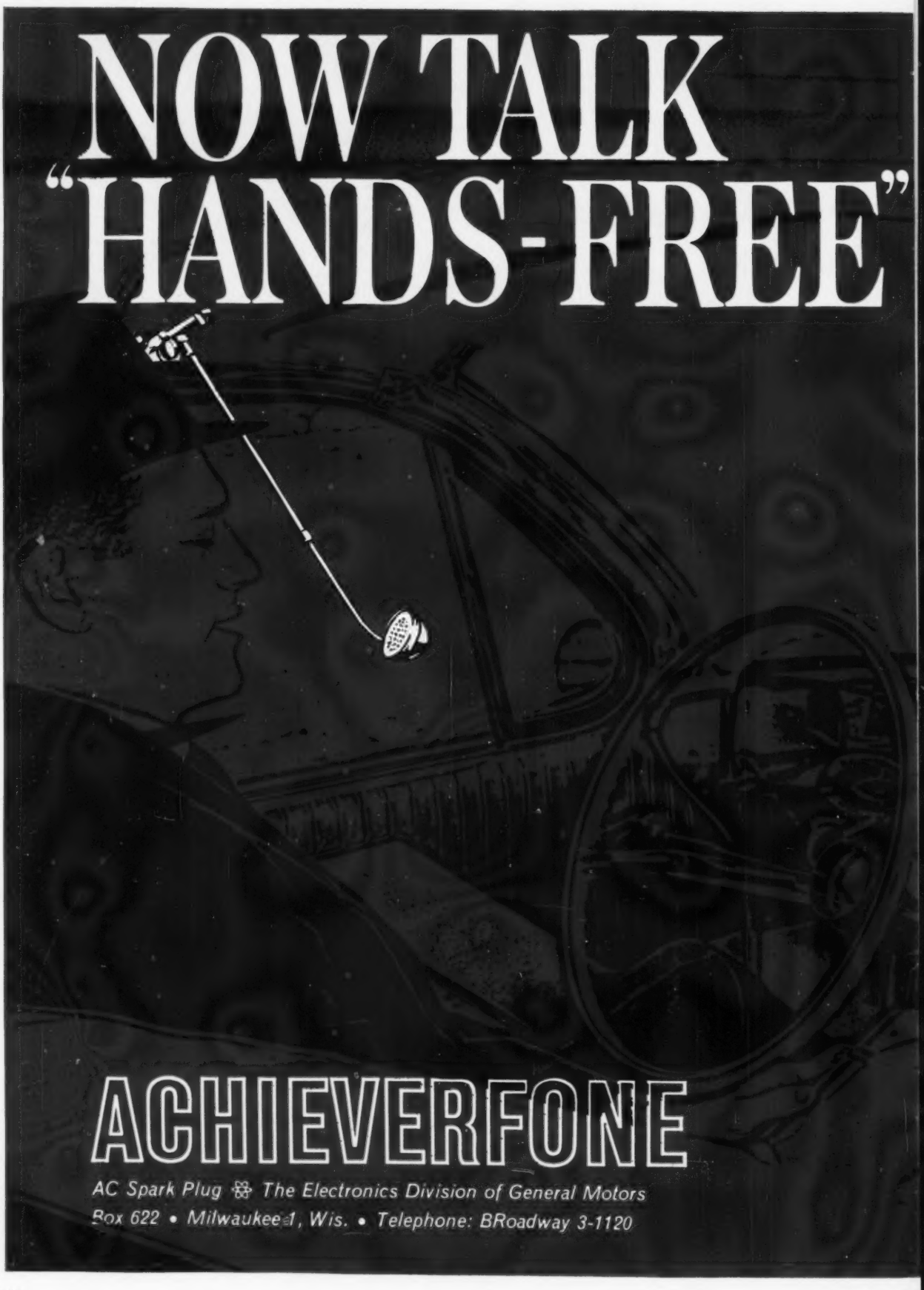
85 School St., Watertown, Mass.

SUBSIDIARIES

United Electrical Controls (Canada) Ltd.
O'Connell Avenue
Dorval, Quebec, Canada

United Sensor & Control Corp.
Box 127
Glastonbury, Conn.

NOW TALK "HANDS-FREE"



ACHIEVERFONE

AC Spark Plug ❀ The Electronics Division of General Motors
Box 622 • Milwaukee 1, Wis. • Telephone: BRoadway 3-1120

ANNOUNCING A GREAT ADVANCE IN MTS BY AC . . .

ACHIEVERFONE WITH "HANDS-FREE" CONTROL

Never before has there been such convenience—such safety in mobile radiotelephony! It's the AChieverfone with "Hands-Free" control!

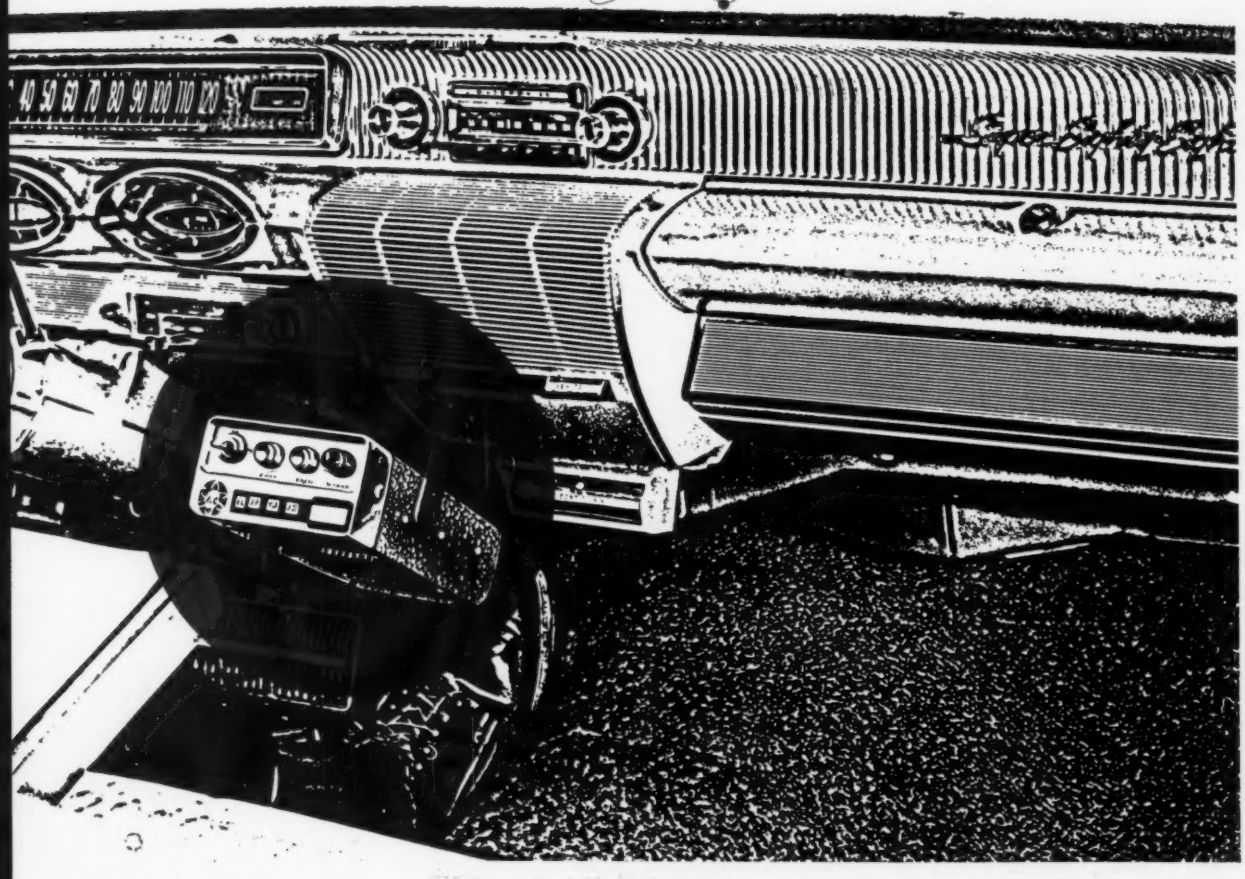
AC engineers have added a new control head design to the four-channel, compact AChieverfone. This design features a boom-mounted dynamic microphone, push-to-talk foot switch and a speaker built into the control head, making it a truly "Hands-Free" system.

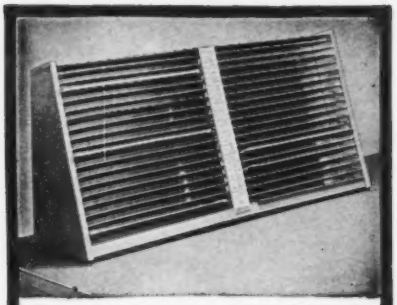
Combine the new "Hands-Free" option with AChieverfone's other advantages! Its design is as modern as the newest office and household telephones, its cost is amazingly low and its superior reliability assures long, trouble-free service. No other mobile radiotelephone available today can offer this outstanding combination of features.

Consider the new "Hands-Free" AChieverfone or the AChieverfone with standard handset control for all your MTS customers. Both models have just two compact units; both have AC's exclusive four-channel pushbutton control . . . making AChieverfone the most versatile, most convenient mobile radiotelephone on the market. For more information about the AChieverfone, write or call AC in Milwaukee today.

Another AChievement in Mobile Communications

AC





Trouble Recorder Card Rack

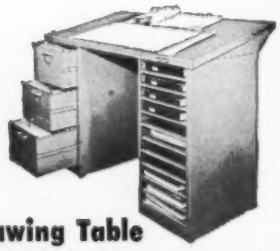
For fast orderly sorting of Trouble Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 8". Height 15". No. D-30325-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.



Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

TWIN POST

Neubauer

MANUFACTURING CO.

517 LOWRY AVENUE N.E.

MINNEAPOLIS 18, MINN.

called persons or establishments are used as codes to apprise the party called that a truck, for example, is on the way, or leaving or arriving, or that some other event is taking place. The subterfuges take various forms with which almost every telephone company is familiar. Although most telephone operating men are aware that these practices are indulged in, apprehension of offenders is difficult.

So prevalent has illicit use of toll service become that some months ago a suit was brought in a mid-west state against an offending trucker. The successful outcome of the litigation was all to the good but would have had a more salutary effect if greater publicity had been given to it. Publicity in the publications of our industry is important but unfortunately does not often reach the attention of those most in need of it.

In January of this year, a draft of legislation was prepared to make illegal the use or attempted use of long distance telephone service buy trick or artifice in any form. I immediately discussed this matter with my fellow officers and it was agreed that I should furnish copies of the draft to the state association secretaries and recommend that they undertake to have the bill introduced in their respective state legislatures. Already it has been favorably acted upon in several states....

USITA Moving Picture

As our industry grows so must the activities of the USITA. In the past 10 years the plant investment of our operating companies has risen from a total of $1,252,740,000 in 1951 to $4,460,000,000 at present, an increase of 256 per cent. In May 1954, our association embarked on a national advertising program with 10 stated objectives, the most important of which were to open new avenues of private capital to assist in financing the expansion and improvement of telephone service, to portray the advantages of investment in Independent companies, and to attract employes to our business.

That the program has paid dividends is apparent from the public recognition that has come to our companies, from the volume of mail flowing into our Washington office from people who did not know before that there was such a thing as an Independent telephone company, from people seeking investment opportunities, from financial institutions seeking information about the extent of the operations of our companies, and from college and high school students and libraries.

The Independent industry is becoming known nationally as an important part of the economy of the country. The advertising program represented a bold and aggressive attempt to claim a fair share of public recognition. Our advertising agency is the J. M. Mathes Co. of New York City, and our advertisements have appeared in *Time, U. S. News and World Report, Better Farming, Town Journal*, and the *Saturday evening Post*. It is in the *Post*, a magazine having a circulation of six million, that our advertisements have appeared exclusively in 1961.

And now as a still further step in the endeavor to get our fair share of public attention we are to have a moving picture, in color. Produced under the supervision of our Advertising Committee by Parthenon Pictures of Hollywood, it is anticipated that the picture will be suitable for use by member companies before service groups, chambers of commerce, women's organizations, high schools, investor groups and other public bodies. . . .

Information will be available as to how to obtain reprints and their cost. Naturally our Advertising Committee is hopeful that the picture will be much in demand and that it will prove a valuable addition to the USITA's efforts to have the Independent industry make an indelible impression on the public conscience.

USITA Sponsored Seminars

Our board of directors adopted a forward-looking position when it authorized, beginning in 1957, an Engineering Seminar, at Michigan State University at Lansing. The seminar is conducted each year under the auspices of the Sub-committee on Engineering Education of our Engineering Committee.

A similar point of view was taken when the board, in 1958, authorized a Management Development Program at the University of Kansas at Lawrence. This program is supervised by the association's Personnel Committee.

The establishment of these seminars gave practical recognition to the need for providing an atmosphere of intensified training of employes possessing a potential for more important responsibilities. There is keen competition in business for professional talent. This is especially true in an industry like ours experiencing rapid and dynamic growth.

Also pursuant to board authorization, the USITA, this past summer, began the sponsorship of a Telephone Marketing Seminar. It too, was at Michigan State University, and was supervised by the association's Telephone Marketing Committee. Everyone will concede that in the ever-present competitive struggle for a fair share of the consumer's dollar every means practicable must be embraced by telephone companies to enhance the chance of staying ahead.

Broadened Viewpoint

Business education must do more to stimulate creativity and imagination. At the beginning of a man's business career "the primary emphasis should be on liberal education and broad fundamentals of economic and corporate management."—DR. CARL H. MADDEN, *dean of the College of Business Administration, Lehigh University.*

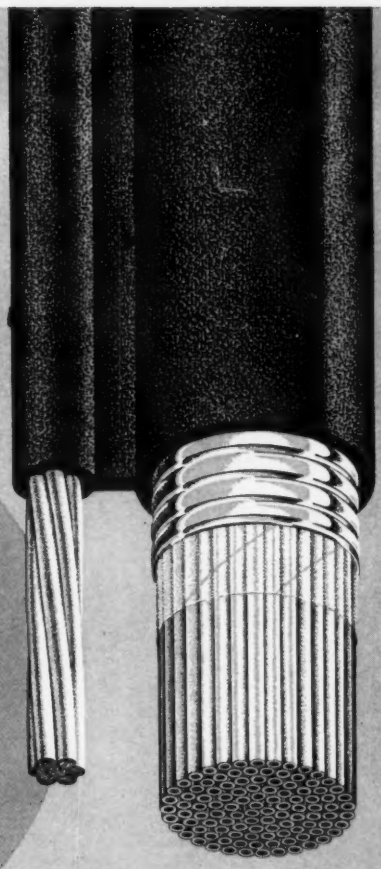


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FIGURE 8

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GHO projects include toll dialing, microwave circuiting and automatic switching. For expansion or an entirely new system, GHO is ready to serve you.

WHAT'S AHEAD IN SETTLEMENTS

(Concluded from page 32)

tion of the USITA separations procedures.

I believe you all know that the National Association of Railroad & Utilities Commissioners held its annual meeting in Atlantic City just last month. During that meeting a resolution was adopted clarifying the section of the NARUC Separations Manual relating to digit absorbing equipment. We have always maintained that the principles of separations recommended by the NARUC should be used in developing costs to the extent costs are necessary in connection with negotiations for improved settlement arrangements. Fortunately, the USITA Manual already contains appropriate language relating to digit absorbing equipment.

The NARUC separations procedures are the result of many years of cooperative effort on the part of both industry and regulatory representatives and their uniform acceptance and application is important to all of us. With this objective in mind we have consistently taken the position that the separations procedures should contain no discriminatory provisions. By limiting the application to Bell of the cost averaging principle in the Modified Phoenix Plan, the NARUC procedures discriminate in favor of Bell customers and to the detriment of our customers. It is wholly illogical, if not illegal, to apply different yardsticks to identical plant in the nationwide toll network, merely because of the make-up of its ownership

The application of the Modified Phoenix Plan in setting interstate rates ultimately results in higher interstate rates for all interstate toll customers than would prevail otherwise. For the Bell customers, however, this is counterbalanced by a reduction in state rate bases. This results in lower state rates offsetting the higher interstate rates. On the other hand, our customers must pay the higher interstate rates without any such offsetting effect.

It has been pointed out that the heart of our industry is the "interconnected network", to use Mr. Kappel's words. That network has been most commonly known as the nationwide telephone, or toll, network. It is no longer limited either to geographic areas or to voice messages, and with the advent of satellites it will become truly world-wide rather than nationwide. The fundamental service of our industry is to offer the customer use of our facilities to communicate anywhere at any time.

Meeting New Requirements

Communication needs today are far different than yesterday and cannot be furnished by simply adding some new piece parts to our already established telephone services. The change has been gradual with no obvious major factor or single development to which we can point. The underlying cause can be found in the ever increasing complexity of this nation's and now the world's economic and business structure. As a result, we are and must be prepared to provide whatever facilities are necessary to tie this complex structure together, communications-wise, and this means meeting service requirements that have heretofore been nonexistent.

In addition to our historic basic services, we now furnish Wide Area Telephone Service; we soon will furnish automatically switched teletypewriter service; and, in the not too distant future, we will add Wide Area Data Service. It has been estimated that by the end of this year, 6,000 installations of various types of devices and machines will be transmitting business data over telephone circuits, in contrast to about 1,200 a year ago. Of even greater significance is the estimate that the number will reach 100,000 by 1965. These changes stem from the fact that the businessman is confronted with two major communications problems. One is the need for more speed and the other is the growing burden of paper work. We are helping them solve these problems.

Add to these requirements other services such as facsimile transmission, telewriting, and closed circuit TV—that only a few years ago were to us something out of science fiction—and envision if you can what the future may hold.

I emphasize, again, that the term "telephone business" is obsolete. A far broader concept of communications has developed in the last few years and competition is becoming ever keener. Today, and much more so tomorrow, our business is and will be built around our ability to get the right information to the right place at the right time. The ever increasing complexity of our society demands that more and more of this information be handled jointly by more than one telephone company.

Thus, "What's Ahead In settlements In Inerchanged Business" is a vast broadening in the types of services provided and rapid growth in the quantities of service furnished—with settlements becoming increasingly important and requiring our ever vigilant attention if such business is to contribute its proper share of the revenues so essential to the financial health of our companies. Under our free enterprise system it is an established fact that effective performance in serving our customers is completely dependent upon a healthy and profitable industry.

REGULATION

(Continued from page 34)

ownership basis, it behooves all segments of our nationwide telephone industry to make certain that the exchange rate levels in comparable territories have received thoughtful and compensatory considerations.

Single Exchange Companies

Some Independents are operating single exchanges where they have no source of revenue except that which they can secure through the exchange earnings of their own exchanges, or from the toll settlements. Others that may have exchanges nearby, but have not sought exchange rates on a comparable compensatory level because they have big city earnings on which to fall back, may well give consideration to this aspect of rate comparison.

Another facet of this problem which should receive very careful and fair treatment is that the Independent exchange owner be fully compensated for his participation in the toll network and if there be error in this matter, the error be on the side of over-compensation rather than under-compensation for the good of the whole industry.

In making this statement, I am looking at the problem from the broad viewpoint of the public interest in order that justice may be done not only to the large integrated communication system, but to the thousands of independently-owned companies whose financial health and well being is an essential ingredient to the maintenance of a sound, privately-owned communication network in the United States. We need strong, financially healthy Independents in this country if the free enterprise system is to survive. It is important for you to manifest an energetic interest in forward-looking *state* regulation.

USITA Helpful

I should like to take this opportunity, as a member of the Joint NARUC-FCC Special Committee on Telephone Regulatory Problems, to express appreciation to your (USITA) Washington office representatives, as well as members of your Toll Compensation Committee, for their effective and cooperative participation in the discussions of the joint committee and its staff subcommittee in recent years.

The work of this joint committee is a splendid example of what can be accomplished by industry and government working together. The growth of modern technology has brought upon us an interdependence foreign to the spirit of the rugged individualist in his struggle for independence. Truly this is a new era of "togetherness" and let us hope we can accept the responsibility of interdependence with-

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The all-new Davis W-36 out-trenches twice-as-expensive machines because lightweight design and positive drive let maximum power to be used for digging. It has 6-hp Briggs & Stratton engine, is positively self-propelled by 6-speed winch drive with protective torque limiter, and trenches 3" to 6" wide to 36" deep at speeds up to 500 fph. Digs by itself, using horsepower... not manpower. Doesn't ruin turf; trenches are easy to backfill. Self transports up to 4.5 mph. This is a trenching man's trencher... designed for profitable trenching. Compare! You'll see! Write for free, descriptive literature.

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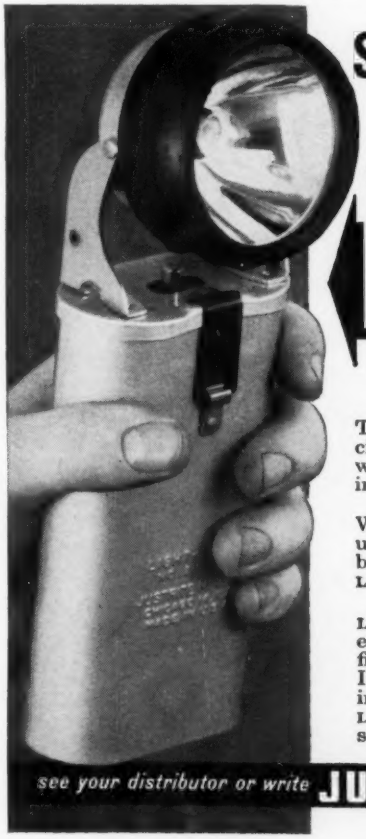

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out losing sight of the need of achieving equity for the Independent.

The interconnecting of telephone service through the properties of a multitude of individual companies weaves a pattern of changing problems requiring constant attention. I do not profess to be an eminent theorist, at least not to the point of being a professor of anything. However, I do contend that good old-fashioned round table discussion and man-to-man talk germinates a brand of logic conducive to settling an argument and getting on with the job. Having been privileged to serve as a member of this joint committee for the past 10 years I will observe, (I trust with pardonable pride) that much has been accomplished and, because of this record, I am hopeful a solution will soon be achieved in formulating a plan for the fair distribution of plant and profits in the handling of toll and exchange business. A fair, equitable and reasonable distribution of the earning potential of interstate and intrastate toll and exchange service is a must if the Independent is to remain independent.

Last, but not least, let us not forget that the phenomenal growth of our nation's communication system is attributable, in part, to the unfailing industry and alertness of Independent telephone companies. They have contributed greatly to the many splendid achievements of the industry and through the coordinating efforts of the United States Independent Telephone Association, a nationwide awareness of the obligations of a public utility has been inspired and encouraged. Because of this association, the Independent telephone company is constantly reminded that operating a public utility is a public trust.

In closing, I could say, "Use the initiative that is in the strength of the Independent telephone industry." This, I need not say, because the proof has shown itself in the eating of the pudding. For example, when we look at the telephone investment today, in 1961, the biggest single investment in central office equipment in the telephone industry, nationwide, is in the step-by-step equipment which was fostered by the Independent telephone industry over the past 60 years.

This Independent initiative has been a major driving force and will continue so, in my opinion, in the maintenance of an important segment in the communication network of the nation. There are nearly as many Independent telephones in the United States as there are in all of Great Britain and France combined. One out of every seven telephones in our country is owned and operated by an Independent company. The Independent segment of the industry owns and must accept responsibility for nearly 12 million telephones. Because of this great public service industry, you have an investment in regulation.

Safety-Conscious PT&T Man Praised by Cal. Columnist

Dermot K. Foley of San Diego, Cal., calls to our attention praise given to a safety-conscious telephone man. Neil Morgan, writing in the San Diego *Evening Tribune*, reports how cautious behavior on the part of this Pacific Telephone & Telegraph Co. installer may have saved a child's life.

It seems that the company requires its men to put devices, 2-feet tall, called safety cones, by the front and rear wheels of their trucks after they park. This makes a safety check imperative before they can drive off.

Installer Gil Dodds noted five children playing nearby as he picked up his cones in Linda Vista. Seconds later, putting his truck in gear, he glanced up and saw only four.

Getting out he found the missing child sitting by a rear wheel. The youngster would have been hit if Dodds had not made his second safety check.

Knowledge in Action

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Model 103 includes the matching cover in chrome or brass satin finish. The cover encloses the amphenol plugs and jacks when used with key telephone sets or other complex equipment.
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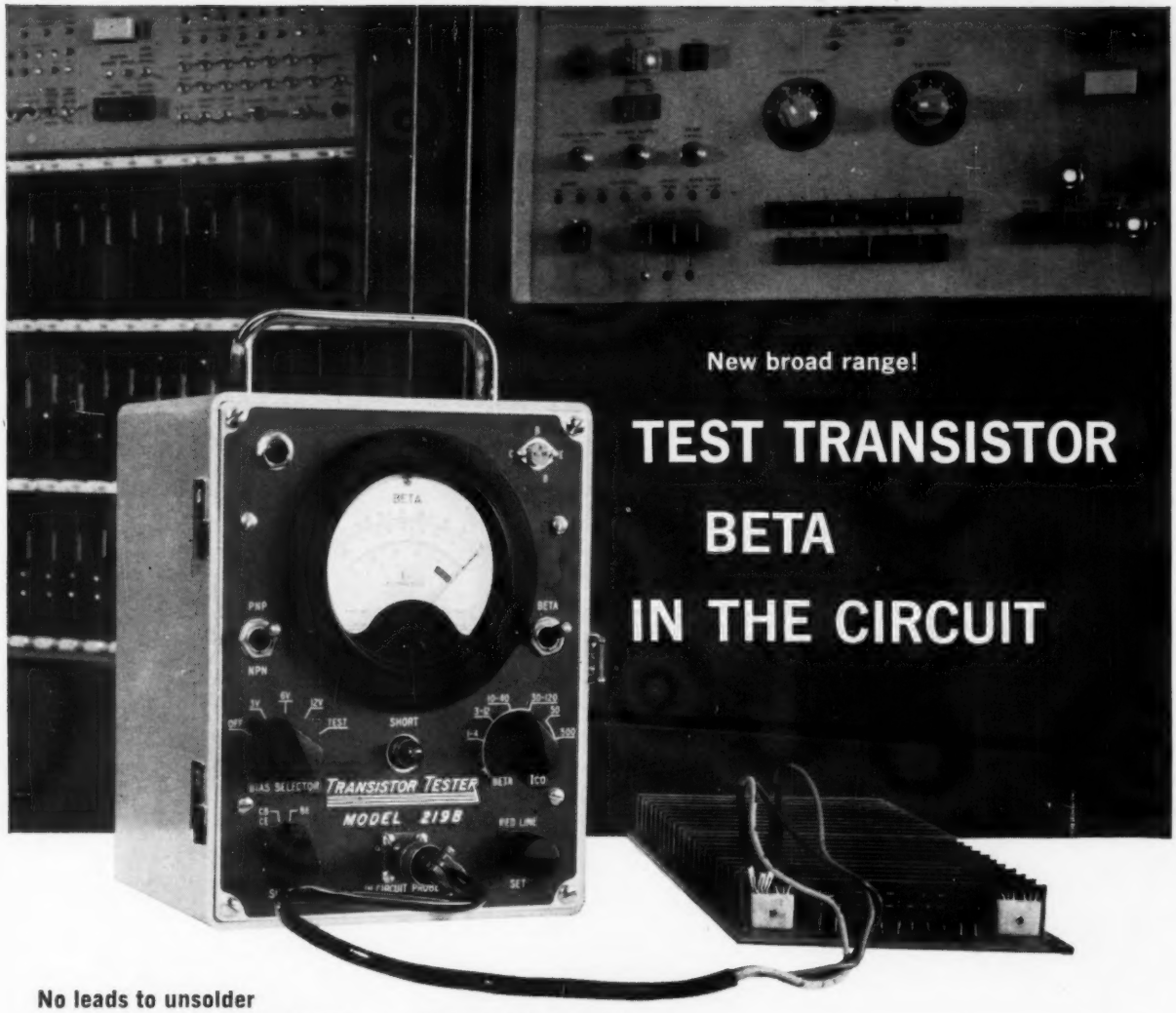

No leads to unsolder
Four overlapping Beta Ranges • High meter resolution
Direct reading with test circuit power off

New Sierra 219B 4-range Transistor Tester reads Beta directly in the circuit; also measures I_{CO}, Beta out of circuit.

Less downtime and less danger of damage to transistors under test with this new Sierra instrument—battery-operated, light weight, portable, easy to use.

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Beta	1-4, 3-12, 10-40, 30-120*
I_{CO}:	0-50, 0-500 ua
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In circuit:	±20% for external loads over 500 ohms. Improved accuracy above 500 ohms, usable readings below 500 ohms.
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Power:	Internal battery, mercury or zinc-carbon type, 600 hrs. av. life; output indicated on front-panel meter.
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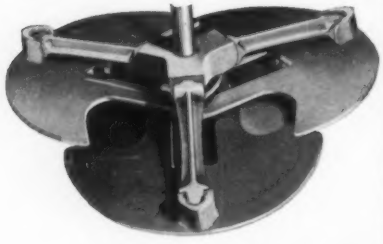

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Courts and Commissions

International Carriers Submit Satellite Plan to FCC

Nine international communications common carriers on Oct. 13 jointly submitted to the Federal Communications Commission a plan for the organization of a non-profit corporation to develop, construct, operate, maintain and promote the use of a commercial satellite communication system (TELEPHONY, Aug. 5).

The satellite system would be used by the carriers initially to provide all types of record and voice services, including limited television transmission on a point-to-point basis.

The plan was the result of 2½ months of discussions conducted by the carriers under the aegis and procedures of the Federal Communications Commission. These procedures were set forth by the commission notice released July 25, 1961 as part of the commission's formal inquiry into the administrative and regulatory problems related to the establishment of commercially operable space communication systems.

Other parties in the proceedings have 15 days to submit comments on the proposed plan.

In their letter transmitting the plan, the carriers summarized their recommendations as follows:

(1) Research, development and experimental trials should be expedited by government and industry and all resources drawn upon to establish the best communications satellite system at the earliest practicable time.

(2) A non-profit satellite corporation should be created to develop, construct, operate, manage and promote the use of communications satellites, for the United States interests therein, in accordance with the public interest objectives specified in the President's statement and the commission's supplemental notice—the satellite corporation to have three directors appointed by the President of the United States or by whomsoever he shall designate to make the appointments, two directors designated by each authorized participant in ownership of the satellites, and a director designated by the carriers which do not own but which may lease satellite facilities.

(3) The United States carriers which are authorized by the commission to provide communications services via satellites should be allowed to participate in joint ownership of the satellites and to include their investments in their rate bases for rate-making purposes, so that rates would continue to be established as at present under regulation by the commission.

(4) Each United States carrier should be permitted to establish and operate its own ground stations, participate in joint ownership of ground stations with other carriers or rent capacity in other carriers' ground stations and satellites, in accordance with public interest objectives set forth in the supplemental notice and as authorized by the commission.

(5) The commission should, expeditiously, take such futher administrative action as may be necessary and proper in furtherance of the proposed plan.

The carriers submitting the plan include the following:

American Cable & Radio Corp., (Mackay Radio & Telegraph Co., Inc., The Commercial Cable Co., All America Cables & Radio, Inc. and Globe Wireless, Ltd.)

American Telephone & Telegraph Co.

Hawaiian Telephone Co.

Press Wireless, Inc.

Radio Corp. of Puerto Rico.

RCA Communications, Inc.

South Puerto Rico Sugar Corp.

Tropical Radio Telegraph Co.

The Western Union Telegraph Co.

Hear Sale Request, Rate Petition in Wisconsin

The Wisconsin Public Service Commission on Oct. 16 was to have heard the application of Westby Telephone Co. for permission to sell its property to the Vernon Telephone Cooperative, Inc., Viroqua.

•

Scheduled on Oct. 19 for a hearing by the Wisconsin commission was the application of the Milton & Milton Junction Telephone Co. for athority to increase its rates.

Delay Raise OK Pending Hearing in New York

The New York Public Service Commission announced that it has blocked a proposal of Empire Telephone Corp., Prattsburg, to increase its rates by about $10,500, effective Oct. 15, pending a hearing.

The Empire company serves about 2,500 stations through dial offices at Prattsburg, Burdett, East Pembroke, Lodi, Pulteney and Urbana. Its proposed rate increases would apply to all subscribers of the East Pembroke and Urbana exchanges and to charges for business extensions served by the other four exchanges.

Although the company's East Pembroke exchange was converted to dial operation last year, rates applicable to manual service there had been continued. Under its proposal, the month-

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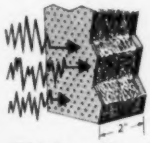
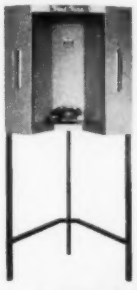
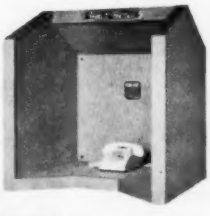


Thick walls of quality acoustical materials . . a must for optimum sound absorption.



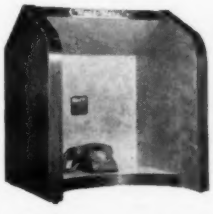
no. 45 wall model or with tubular steel stand

Outstanding in acoustical performance. No other booth has its sound quieting efficiency. Silver-gray hammered finish.



no. 602 all steel wall model

Inside walls of patented construction with heavy gauge steel over sound absorbing material. Gray wrinkle-finish.



no. 601

built of quality wood

Available in walnut stain or unfinished birch. Thick walls of the finest sound absorbing materials.

no. 211 heavy duty floor unit

Thick acoustical walls. All-steel construction with gray wrinkle-finish. Easy to keep clean.

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ly rates for the East Pembroke exchange would have been made uniform with those now charged for service through the other exchanges.

Also, because subscribers of the Urbana exchange now have an increased calling area resulting from the establishment of toll-free service to the company's exchanges at Prattsburg and Pulteney and to the Hammondsport exchange of New York Telephone Co., a new level of rates was proposed for them.

As filed by the company, monthly increases to the 850 subscribers of the East Pembroke exchange would produce about $9,650 additional annual revenue. Similarly, charges to the 150 subscribers of the Urbana exchange would have produced about $700 additional annual revenue.

General of SW Obtains Three Texas Rate Raises

The following rate increases became effective in exchanges of General Telephone Co. of the Southwest, San Angelo, Tex., during September.

Follett, Tex. Dial, 198 stations. Effective: Sept. 1.

	Old	*New*
One-party business	$9.50	$10.50
Two-party business	8.00	9.00
One-party residence	5.25	6.00
Two-party residence	4.25	4.85
Four-party residence ..	3.50	4.10
Ingleside, Tex. Conversion to dial; 869 stations. Sept. 21.		
One-party business	8.75	10.50
Two-party business	7.00	8.50
One-party residence	4.75	5.00
Two-party residence	4.00	4.00
Four-party residence	3.50	.....
Smiley, Tex. Dial, 206 stations. Sept. 6.		
One-party business	9.50	11.00
Two-party business	7.50	9.50
One-party residence	5.50	6.00
Two-party residence	4.50	5.00

Approve Rate Increase at Georgia Company's Exchange

Coastal Utilities Inc., Hinesville, on Sept. 22 was given permission by the Georgia Public Service Commission to increase rates at its Richmond Hill exchange.

With the aid of a $986,000 loan from the Rural Electrification Administration, the company plans, among other things, to construct a new central office building in the Richmond Hill area and to upgrade service to meet subscribers' requests.

Present and approved rates are as follows:

Business	*Present*	*Approved*
One-party	$5.50	$7.00
Two-party	4.50	6.00
Four-party	3.50	5.00
Multi-party rural	3.50	4.50
Residence		
One-party	3.50	4.25
Two-party	3.00	3.50
Four-party	2.50	3.00
Multi-party rural	2.50	3.50

The present multi-party rural rates are subject to mileage charges. Those authorized are uniform, with no additional charge for mileage.

The rates for service, which the company had proposed, were 25 cents per month higher than those authorized by the commission, with the exception of multi-party rural rates. For these rural rates, the rates proposed by the company were accepted by the commission.

Ask Rate Increase in Alabama

The Alabama Public Service Commission on Oct. 6 was to have heard the petition of the Butler Telephone Co. for a rate increase, and for various changes in local service at Butler, Pennington and Lisman.

For Whom the Bell Tolls

"Pity is a sense of our own misfortunes in those of another man; it is a sort of foresight of the disasters which may befall ourselves. We assist others, in order that they may assist us on like occasions; so that the services we offer to the unfortunate are in reality so many anticipated kindnesses to ourselves."—ROCHEFOUCAULD.

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●Here's the reel jack that is strong and stable without hard-to-handle extra weight. An aluminum alloy housing reduces overall weight by 21 pounds, yet maintains full 10-ton capacity. "T" shaped laminated oak base gives solid, safe foundation. Single acting mechanism provides easier operation. Handles reels to 84" dia.; weighs 83 lbs. Furnished with 5' lever bar.

Write for full data on Reel Jack No. A-1029 and other Simplex Utility Jacks.

Pole Pulling and Straightening Jacks—Save time, cut work crews necessary to pull, straighten or move poles. No. A-1538 has aluminum housing, 15-tons capacity, weighs 63 lbs.

All-Purpose Jack — No. 310A lifts, pulls, pushes at any angle. Four lift points, 15-tons capacity.

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Wilson Is Service Engineer S-C Telecommunications

Carl R. Wilson has been promoted to a position as service engineer for Stromberg-Carlson telecommunication products. The advancement was announced by David Balis, manager of customer service for General Dynamics/Telecommunication.

C. R. WILSON

Mr. Wilson will serve customers in the Kansas City branch territory. He succeeds Curtis B. Meyers, who has moved to the assistant chief installer's post at the division's headquarters in Rochester, N. Y.

Mr. Wilson began his career with the company in 1954 as a Stromberg-Carlson telephone equipment installer. Since 1956, he has been an installation foreman for "XY" dial systems, most recently, in Tomah, Wis., where he worked on the North-West Telephone Co.'s "XY" dial network.

Prior to joining Stromberg-Carlson, he was employed by the Western Electric Co. as an installer.

Mr. Wilson is a native of Bruceton, Tenn., and served with the U. S. military forces during the Korean conflict.

Koppers Expands Cal. Plant, Opens Pa. Research Center

Koppers Co. Inc. on Sept. 25 revealed plans to carry out a major plant expansion at its Oroville, Cal. plant to go into commercial production of its new "Cellon" process for the pressure treatment of wood. The announcement was made following a directors' meeting by Douglas Grymes, vice president and general manager of the company's Wood Preserving Division.

"Cellon"—the Koppers trademark applied to this development—is described by Koppers as a new process for the treatment of poles, crossarms, lumber and plywood which utilizes liquified petroleum gas in a pressure vessel to deposit the preservative chemicals in the fibers of the wood. By this process it is said to be possible

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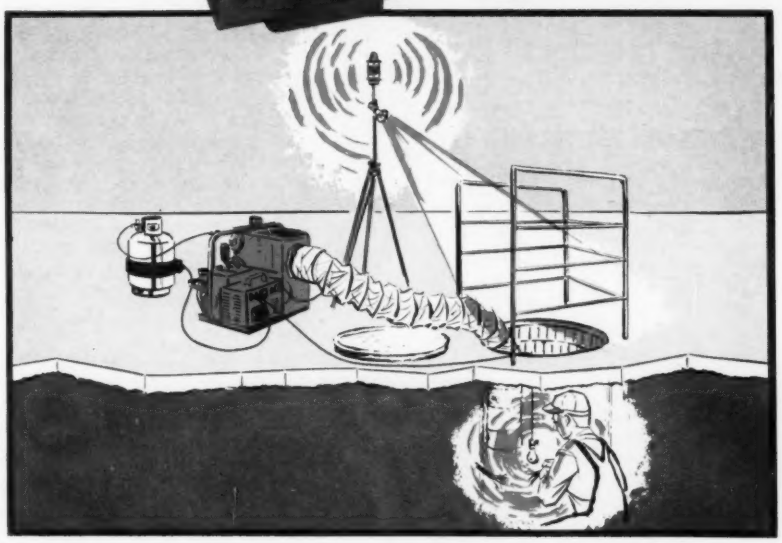

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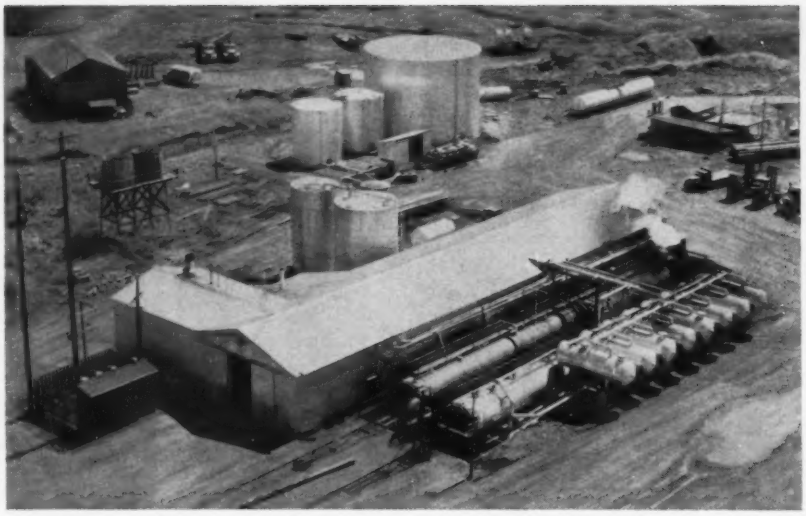

Treating facilities at the Oroville, Cal. plant, Wood Preserving Division, Koppers Co., Inc., where a major expansion is underway for treatment of poles, lumber and plywood by the company's new "Cellon" process.

to achieve the cleanest possible surface and the deepest penetration.

The treated wood, the company states, is unchanged in color or weight, in size, in strength, in workability, and glueability. It can be readily clear-finished or painted. It is reported to be resistant to termites and decay. It does not leach, and does not require re-kiln drying.

Since "Cellon" treatment, Koppers says, does not swell the wood, dry and finished-to-size parts may be treated without distortion or grain-raising. Freshly cut green wood can also be readily treated.

In making the announcement, Mr. Grymes indicated that tests conducted so far give evidence that 100 percent penetration of the preservative is obtained in the treatment of Douglas fir poles. He also emphasized that the new "Cellon" process will make possible the fabrication of lumber and plywood after treatment—an operation he described as "never before practicable, using conventional treatments."

According to present plans, construction of the new plant facilities at Oroville will be completed early in 1962. Poles, crossarms and other wood products treated by the new "Cellon" process should be commercially available from Oroville in March 1962.

•

Koppers also has announced the dedication of its research center at Sommervell Park, Monroeville, Pa.

The 8½-million-dollar center is located on a 176-acre site. So far, one-third of the buildings planned have been completed including the five-story administration building, three three-story laboratory wings and several outlying auxiliary buildings.

As additions become necessary, the glass enclosed stairways at the end of each wing can be removed and replaced to the ends of the new wings.

Presently, the center has a staff of 450, according to Dr. Paul W. Bachman, vice president and director of research. Future plans call for more than 1,500 scientists and their assistants at the center, about four times the current staff.

Dickerson Heads Marketing For Radiation Communications

Radiation, Inc. has announced the appointment of Floyd W. Dickerson as marketing manager—communications. In this position, Mr. Dickerson will be responsible for the sale of

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International Creosoting and Construction Co., Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Wood Preserving Division—926 Grand Avenue, Kansas City, Missouri—"LONG-BELL" pressure-treated Southern Pine and Douglas Fir Poles—Creosote or Penta.

Piedmont Wood Preserving Company—Creosoted and Creosote-Penta Treated Pine Poles. Plant Augusta, Georgia. Yards, Virginia, West Virginia and Connecticut. Address inquiries to Box 1662, Spartanburg, S. C.

Texas Creosoting Company—512 Main Street, Orange, Texas—Creosoted Southern Yellow Pine and Douglas Fir Poles. Can also treat with "Penta."

Radiation has developed several new systems for test and maintenance, and increasing acceptance of its Telegraph Distortion Measurement System (TDMS) now in volume production.

Mr. Dickerson will also integrate marketing efforts for company developments in miniature solid-state switching equipment that automatically routes telephone, data and other communications links, with application to satellite communication systems.

During his 25 years of experience in commercial communications, Dickerson has served as department and general sales manager for Graybar Electric Co.'s Telephone Division; and previously, as transmission and equipment engineer for Southern Bell Telephone & Telegraph Co.

Prior to joining Radiation, he was a distributor for communications equipment and supplies in the southeastern United States, and a technical sales representative and consultant to several equipment manufacturers.

Mr. Dickerson received his B.S. degree in electrical engineering and communications engineering from North Carolina State College in 1936. He attended several technical schools while with the Bell System, and during military service as a communications officer with the U.S. Army Signal Corps during World War II.

His society memberships include the American Institute of Electrical Engineers, and Telephone Pioneers of America.

He is a native of North Carolina.

Copperweld Steel's Annual Report Wins Second Place

Copperweld Steel Co. has been selected for a second-place award for its stockholder annual report in the steel industry classification, covering companies with assets under 100 million dollars, in the 21st annual report survey sponsored by *"Financial World,"* national weekly magazine.

Symbolic of the achievement, an attractive certificate will be presented to James M. Darbaker, president, on Oct. 30, at an awards banquet in the grand ballroom of the Statler Hilton Hotel in New York City.

In this particular steel industry classification, Copperweld Steel Co. placed second among 16 entrants.

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SPECIALTY ITEMS for the TELEPHONE INDUSTRY

MAGNOLIA TELEPHONY BLACK TOUCH-UP PAINT—For Pay Station Telephones—Code TU-2—Packed 12-16 oz. bombs per case—Wt. 16#.

MAGNOLIA TELEPHONY WHITE TOUCH-UP PAINT—For Passenger Cars—Commercial Vehicles——Code TU-3—Packed 12-16 oz. bombs per cs.—Wt. 16#.

MAGNOLIA TELEPHONY GREEN TOUCH-UP PAINT—For Commercial Cars and Commercial Vehicles—Code TU-1—Packed 12-16 oz. bombs per case—Wt. 16#.

MAGNOLIA TELEPHONY GOLD TOUCH-UP PAINT—Trim for Passengers Cars—Commercial Vehicles—Code TU-4—Packed 12-16 oz. bomps per cs.—Wt. 16#.

MAGNOLIA SUN RESISTOR SPRAY BOMBS—Light Green Color—Used for Windshields, Telephone Booths, Windows facing west, to eliminate sun glare and necessarily cut down high temperatures—Code SR-10. Packed 12-16 oz. bombs per case.—Wt. 16#.

MAGNOLIA FROSTY—For Frosting Glass Windows, etc. Makes Clear Glass Translucent—Used where privacy is needed. Code F-15—Packed 12-16 oz. bombs per cs. Wt. 16#.

MAGNOLIA SAF-GLO ORANGE-RED FLUORESCENT—High Visibility Safety Coating— Code SG-1—Packed 12-16 oz. bombs per case—Wt. 16#.

MAGNOLIA SAF-GARD CLEAR PLASTIC PROTECTIVE TRANSPARENT COATING—Contains a Sun Screening Agent has numberless uses—Code SG-0—Packed 12-16 oz. bombs per case—Wt. 16#.

MAGNOLIA ALUM-COAT CHROME ALUMINUM—Industrial Protective Coating, Heat Resistant—For interior or exterior use. Code APC-0—Packed 12-16 oz. cans per cs.—Wt. 17#.

MAGNOLIA GLAYZ-IT TELEPHONE REFINISHER BOMBS—Cleans, revitalizes, preserves the surface. Code M-115—Packed 12-12 oz. bombs per cs. Wt. 13#—Used by at least 5000 Telephone Exchanges in the United States.

MAGNOLIA MAGNA-CLEAN—Especially adaptable for cleaning, disinfecting and deodorizing Telephone Receivers and Transmittor Caps—Code GDC-1—Packed 12-16 oz. bombs per cs. Wt. 16#.

NEW GENERAL TELEPHONE CLEANER—For cleaning Plastic Telephone Cases—Code G-10. Packed 24 Pts. per cs.—Wt. 40#.

MAGNOLIA MARVEL TELEPHONE CLEANER—For cleaning old type telephones—Removes dirt, corrosion, grease, carbon, gum, paint from telephones—Code Mp-222—Packed 24 Pints per case—Wt. 40#—Packed 6-1 gallons per case—Code M-222—Wt. 60#.

MAGNOLIA PLASTIC TELEPHONE CORD CLEANER—Will remove all obstinate stains immediately—noninjurious to Rubber or Plastic Cords—no fire hazard—Code L-31—Packed 24 Pts. per case—Wt. 40#.

MAGNOLIA PETROLEUM SPIRITS—Cleaner for Telephone Banks, Cable Carrier Systems, Coil Cases, Transistor Tone Line Equipment, Trunk Carriers, Micro Wave Equipment and many other uses. Code MPS-0—Packed 6-1 gallons per case—Wt. 72#.

MAGNOLIA MAGNA-LUBE SILICONE ALL PURPOSE LUBRICANT—Lubricates, stops squeaks, protects. For use on Metal, Rubber, Vinyl. Code SAP-3—Packed 12-16 oz. bombs per case—Wt. 13#.

MAGNOLIA MAGNATHENE DEGREASING SOLVENT—Low Toxicity, Safe, High Solvency—Non-Flammable—Code 1-AA—Packed 12-16 oz. bombs per case—Wt. 17#.

MAGNOLIA CHLOROTHENE DEGREASING SOLVENT—Low Toxicity, Safe, High Solvency—Non-Flammable—Code MP-333—packed 24 Pts. per case—Wt. 40#—Packed cases 6-1 gallons, Code M-333—Wt. 85# per cs.

MAGNOLIA ICE-RID—Windshield De-Icer Melts Ice and frost instantly, Code 456—Packed 12-16 oz. bombs per case—Wt. 16# per case.

MAGNOLIA RUST-RID—Sprays Rust Away Instantly—Frees Nuts, Bolts, Studs and other corroded Poleline Hardware. Code 123—Packed 12-16 oz. cans per case—Wt. 18#.

MAGNOLIA KORROSION RID—Will remove Corrosion, Salt Spray, etc. from Aluminum Telephone Booths, Windows, Doors, etc. Packed 24 Pints per case—Code MK-0. Wt. 40# per cs.

MAGNOLIA MAG A1-3 ALUMINUM CLEANER AND POLISH BOMB. It cleans and shines the entire booth inside and out. For cleaning and polishing all Auminum, Chromium, Stainless Steel, Brass, Enameled and other high glossed surfaces. Code A1-3—Packed 12-12 oz. bombs per case—Wt. 13#.

MAGNOLIA TELEPHONE BOOTH GLASS CLEANER BOMBS—It's New! It's Economical! Easily dissolves smudge, film, scum, smear, Code GC-3. Packed 12-15 oz. bombs per cs. Wt. 15#.

MAGNOLIA BOOTH BRITE KITS CONTAIN THE FOLLOWING ITEMS:

1—Magnolia Telephone Booth Glass Cleaner Bomb
1—Magnolia Magna Lube Bomb—Removes rust, lubricates hinges, stops squeaks
1—Magnolia Spray Gun Control
2—Special 3-M pads
2—White Rags 30" square
1—Whisk Broom
1—Magnolia Magnathene Bomb—Degreasing solvent, safe—non-flammable
1—Magnolia Magna-Clean Bomb, Cleaner, Disinfectant and Deodorizer for Telephone Receivers and Transmitter Caps
1—Magnolia Glayz-It Telephone Refinisher Bomb
1—Pint Magnolia Aluminum Korrosion Rid—Removes oxidation, Code #7003
1—Mag Al-3 Aluminum Cleaner and Polish Bomb

MAGNOLIA VIREX TELEPHONE GERMICIDE—Instantly aids in the fight of Air Borne Germs—Sanitizes and Deodorizes Offices and Public Telephones—Code V-2. Packed 12-12 oz. bombs per case—Wt. 13#.

MAGNOLIA MAGNA MIST BOMBS—Fight Air-Borne germs and odors. Helps reduce sickness, absenteeism. Improves working conditions. Code M-117—Packed 12-12 oz. bombs per case—Wt. 13#.

MAGNOLIA MAGNA SHEEN—Perfect control for dust problems—especially adaptable for areas where delicate instruments and switches are in use. Code SM-6. Packed 12-16 oz. bombs per case. Wt. 17#.

MAGNOLIA SNEX BOMB HOLDERS FOR WASP REPELLENT—Used on Cable Terminals and Junction Boxes—Code B-5—Packed 6 per case—Wt. 15#.

MAGNOLIA SNEX PYRETHRUM BOMBS—For Wasp Repellent. Code SP-60—Wt. 13# per case.

MAGNOLIA SPRAY CONTROL GUN—Code G-2—We urge that everyone using our Bombs use our Spray Control Gun. This makes the item twice as effective and very economical. Wt. 4 oz.

MAGNOLIA CHEMICAL CO., INC.

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Let our "Revenue Men" show you

THE EXTRAS THAT GO WITH INCREASED SALES!

Take a man like

Mel Hauser

Mel is one of our "Revenue Men" in San Antonio, Texas.

His sales savvy covers a wide range—real Texas-sized. Mel started his business career with an electrical company, packing in seven years' experience. Then, seven months before Pearl Harbor, he joined the U. S. Army.

Immediately after the war, he went back to work in sales — first with a specialty company, then in the insurance business.

In 1947, Mel joined General Telephone Directory Company as a sales representative in our San Antonio unit. Later he went to Texarkana as senior salesman, and became Sales Supervisor of the Texarkana unit in 1952. He returned to the San Antonio unit as Sales Supervisor in 1954.

Mel and his wife have two lovely teenage daughters.

Men like Mel Hauser are typical of the "Revenue Men" who work for General Telephone Directory Company and for you. And they all have one thing in common—they are always an asset to any community.

You get more than extra sales when you put one of our "Revenue Men" to work on your directory.

His manners, his methods will be a positive credit to your company. He'll be welcomed by your advertisers.

He'll work together with you to produce a book you can be proud of. A directory with complete Yellow Pages service—showing the public where to go for all kinds of purchases, rentals and services. A directory with maximum accuracy, maximum revenue.

And you won't have a worry in the world. Selling, publishing and printing are all done to perfection as part of our Complete Directory Service Plan.

Want to know more about it? A phone call or letter to our nearest office will bring a representative on the double.

GENERAL TELEPHONE DIRECTORY COMPANY

1800 Oakton Boulevard
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